

P0039776	Supplier	ACI001-VC	1	1	Net 30	M5052H32S,040	5052-H32, 040 Sheet: MATERIAL: 5052-H32 ALUMINUM SHEET AS PER QQ-A-250/8 OR AMS-QQ-A-250/8 OR AMS 4016 OR ASTM B209 receive st						64	5/11/2018	64			S070814		Stock	5/12/2018	S 2.34 / st	
			2			M5052H32S,032	5052-H32, 032 Sheet: MATERIAL: 5052-H32 ALUMINUM SHEET AS PER QQ-A-250/8 OR AMS-QQ-A-250/8 OR AMS 4016 OR ASTM B209 receive st						64					S070815		Stock	5/12/2018	S 1.97 / st	
			3			M6061T6R3,750	6061-T6 Round Bar 3.750" : MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM ROUND BAR AS PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117 4128/4115/4116 OR QQ- AA-200/8 OR AMS-QQ-A- 200/8 OR AMS 4160 OR ASTM B221 OR ASTM B221 receive ft					12					S070816		Stock	5/12/2018	S 52.73 / ft		
			4			M6061T6R0,750	6061-T6 Round Bar .750" : MATERIAL: 6061- T6/T651/T6510/T6511/T62 ALUMINUM ROUND BAR AS PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117 4128/4115/4116 OR QQ- AA-200/8 OR AMS-QQ-A- 200/8 OR AMS 4160 OR ASTM B221 OR ASTM B221 receive ft					40					S070817		Stock	5/12/2018	S 1.55 / ft		
			5			M6061T6B0,750X08,000	6061-T6 Bar .750" X 8.00" : MATERIAL: 6061- T6/T651/T6510/T6511/T62 ALUMINUM BAR PER QQ-A-225/8 OR AMS-QQ- A-225/8 OR AMS 4160 OR ASTM B211 OR ASTM B221 receive ft				12						S070818		Stock	5/12/2018	S 20.95 / ft		
			6			M6061T6B0,750X01,500	6061-T6 Bar .750" X 1.50 : MATERIAL: 6061- T6/T651/T6510/T6511/T62 ALUMINUM BAR PER QQ-A-225/8 OR AMS-QQ- A-225/8 OR AMS 4160 OR ASTM B211 OR ASTM B221 receive ft				20						S070819		Stock	5/12/2018	S 4.00 / ft		
			7			M304R0,4375	304 Round Bar 0.4375 : MATERIAL: AISI 304/316 SS ROUND BAR AS PER ASTM A276 NOTE: AISI 303 NOT ACCEPTABLE receive ft				12						S070820		Stock	5/12/2018	S 1.72 / ft		
			8			M304R0,375	304 Round Bar 0.375 : MATERIAL: AISI 304/316 SS ROUND BAR AS PER ASTM A276 NOTE: AISI 303 NOT ACCEPTABLE receive ft						12				S070821		Stock	5/12/2018	S 13.02 / ft		

PO No	Supplier	Line No	Rel No	Terms	Purchased Item	Description	For Part	Project	Equipment	ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Container No	Status	Receive Date	Price/Unit	
		9			MA140H-R1 1000	4140 round bar 1.00 : AISI 4140H ROUN BAR PER ASTM A304-A193-03-02-A-434-BC/A-193-03-03-A322-91 OR UNS# G41400 MINIMUM ULTIMATE TENSILE STRENGTH=100 KSI MINIMUM YIELD TENSILE STRENGTH=66KSI										Stock	5/12/2018	\$ 4.43 / ft	
		10			MA140H-R1 500	4140 Round Bar 1.500 : AISI 4140H ROUN BAR PER ASTM A304-A193-03-02-A-434-BC/A-193-03-03-A322-91 OR UNS# G41400 MINIMUM ULTIMATE TENSILE STRENGTH=100 KSI MINIMUM YIELD TENSILE STRENGTH=66KSI					5		5		S070823	Stock	5/12/2018	\$ 9.61 / ft	
		11			M303R0 375	303 Round Bar 0.375" : MATERIAL: AISI 303 SS ROUND BAR AS PER ASTM A582 NOTE:304/316 NOT ACCEPTABLE receive ft					36		36		S070824	Stock	5/12/2018	\$ 1.43 / ft	
		12			M303R0 750	303 Round Bar 0.750 : MATERIAL: AISI 303 SS ROUND BAR AS PER ASTM A582 NOTE:304/316 NOT ACCEPTABLE receive ft									S070825	Stock	5/12/2018	\$ 4.85 / ft	
		13			MT-A513-T-1000W0.120	A513 Seamless Alloy Steel Round Tubing 1" dia. x 0.120" Wall					100		112		S070826	Stock	5/12/2018	\$ 2.47 / ft	
		14			MT-A140-S-0.500X10.000	AISI 4140 Steel Speed/Plate					4		4		S070827	Stock	5/12/2018	\$ 58.81 / ft	
		15			M6061T6S 625	6061-T6 625 Sheet : MATERIAL: 6061-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/11 OR AMS-QQ-A-250/11 OR AMS-4025 OR AMS 4027 OR ASTM B209 receive st					32		32		S070828	Stock	5/12/2018	\$ 35.61 / st	
		16			M6061T6S4 500X12.000	6061T6 sheet 4.500 X 12.000 (Cut to 20.000") : MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR PER QQ-A-225/8 OR AMS-QQ-A-200/8 OR AMS-4160 OR ASTM B211 OR ASTM B221 receive ft					17		17		S070829	Stock	5/12/2018	\$ 339.00 / ft	
		17			M6061T6R10.000	6061-T6 Round Bar 10.00" : MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM ROUND BAR AS PER QQ-A-225/8 OR AMS-QQ-A-200/8 OR AMS-4160 OR ASTM B211 OR ASTM B221 receive ft					3		3		S070830	Stock	5/12/2018	\$ 434.45 / ft	
		18			MT-A513-T-0.750W0.058	A513 Seamless Alloy Steel Round Tubing 0.75" dia. x 0.058" Wall					20		24		S070831	Stock	5/12/2018	\$ 15.25 / ft	
Total:												501							
												521							

DELIVERY - CLIENT

ACIER OUELLETTE INC.

935, Boul. du Havre
 Salaberry de Valleyfield (Québec) J6S 5L1
 Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248
 Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

Customer N°

Date

Delivery date

Your order N°

Processed by

Salesman

Carrier

Credit Terme

Page

Billed to

DART AEROSPACE LTD

1270, ABERDEEN ST.
 HAWKESBURY, Ontario, K6A 1K7

Shipped to

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

Delivery Route 5

Instruction F-M

Product Description	Weight	Qty	U/M	PCS NB						Internal Use Only								
				CMD	EXP	B/O	IN	I	S	C	OUT							
1 ALU PLATE 5/8 6061-T651 RANDOM PAL-586061-V 4298 <div>2 X 4' X 4' LINE 15 HEAT: 17cn-e-1597</div> <div>COUPE A LA SCIE</div> <div>SCIE 1</div>	288.64	32.00	PI2_\$CLB		1 x 1 x 1		32	PI2									DAS 11 9-89 MAY 11 2018	
TRANSIT ST-JEROME LE 09/05																		
3 ALU PLATE 4 1/2 6061-T651 RANDOM PAL-4126061-V 7485 <div>10 X 12" X 20" LINE 16 AC15013-TH-09/05 HEAT: 12-5826</div>	1 095.14	17.00	PI2_\$CLB		10 x 12 x 20 = 08 x 01 x 01			10	PI2									DAS 11 9-89 MAY 11 2018

NIR : R-109516-6

Next Page...



DELIVERY - CLIENT

CO00087281

ACIER OUELLETTE INC.

935, Boul. du Havre
Salaberry de Valleyfield (Québec) J6S 5L1
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

Customer N°

Date

Delivery date

Your order N°

Processed by

Salesman

Carrier

Credit Terme

Page

Billed to

DART AEROSPACE LTD

1270, ABERDEEN ST.
HAWKESBURY, Ontario, K6A 1K7

Shipped to

, Ontario,

Att: CHANTAL LAVOIE Tél.: 613-632-5200

Delivery Route 5

Instruction F-M

Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only			
				CMD	EXP	B/O	IN	I	S	OUT
4 ROUND ALU 10 6061-T6 RANDOM NS RAL-10-V 9129 1 X 36" LINE 17 AC15913-TH-09/05 HEAT: 4042702	282.75	3.00	PI_\$CLB		14 36		3		MAY 11 2018	DAS 11 9-89
5 TUBE MEC-0-750 OD X .058 NS TME-0750058 9987 1 X 20' R/L LINE 18 AC15914-ATT-09/05 HEAT: A718541	44.40	20.00	PI_\$PI		14 36		24		MAY 11 2018	DAS 11 9-89

Conditions :

All sold and delivered materials remain the property of "Acier Ouellette Inc." until payment is made in full, complete and cashed. All lost materials are at the buyer's expense. The warranty offered by "Acier Ouellette Inc." is the same as offered and honored by the manufacturer and his warranty is transferred by "Acier Ouellette Inc." to the client. The buyer hereby accepts to respect the following conditions: Net 30 days from billing date and the buyer accepts to pay administration charges of 2% per month (24% per annum) on all past due amounts over 30 days. Any default in respect with this contract will lead to payment by acceleration and permits to the seller, at his choice to claim for the balance due or the repossession of the goods sold. All claims must be made within five (5) days with this document enclosed. Any merchandise that has been damaged, cut or modified cannot be returned. All goods returned must be with our authorization and are subject to a 25% restocking charge.

Total Weight (Lbs) : 1 710.93

NIR : R-109516-6

Prepared By :

Verified By :

Delivered By :

Time

Y	M	D

Customer's Signature

Date

Total (\$CAD)



DELIVERY - CLIENT

CO00087288

ACTIER OUELLETTE INC.

935, Boul. du Hâvre
Salaberry de Valleyfield (Québec) J6S 5L1
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

Customer N° CLI0001056
Date 2018/05/02
Delivery date **2018/05/11**
Your order N° PO039776

Billed to

DART AEROSPACE LTD
1270, ABERDEEN ST.
HAWKESBURY, Ontario, K6A 1K7

Shipped to

, Ontario,
OUELLETTE VALLEYFIELD
Net 30 Days

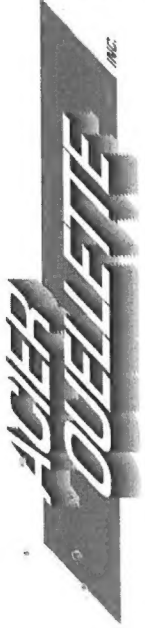
Att : CHANTAL LAVOIE Tél.: 613-632-5200

Delivery Route 5 Page 1

Instruction	F-M	Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only		
						CMD	EXP	B/O	IN	I	S C
1		ALU SHEET .040 (18G) 5052-H32 (4 X 8) FEAL-040485052 3124 2 X 4' X 8' (PVC 1 SIDE) LINE#1 HEAT: GFB1801W50083 AC15949-YR-2018-05-07	36.03	64.00	PI2_\$CLB		2X		② 64 P12		
2		ALU SHEET .032 (20G) 5052-H32 NS FEAL-032 9714 2 X 4' X 8' (PVC 1 SIDE) LINE#2 HEAT: GFB1710W50138 AC15948-YR-2018-05-07	28.86	64.00	PI2_\$CLB		2X		① 64 P12		

NIR : R-109516-6

Next Page...



ACIER OUELLETTE INC.

935, Boul. du Hâvre
Salaberry de Valleyfield (Québec) J6S 5L1
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

DELIVERY - CLIENT

CO00087288

Customer N° CLI0001056
Date 2018/05/02
Delivery date **2018/05/11**
Your order N° PO039776
Processed by Eric Kaehlert
Salesman
Carrier OUELLETTE VALLEYFIELD
Credit Terme Net 30 Days
Page 2

Shipped to

DART AEROSPACE LTD
1270, ABERDEEN ST.
HAWKESBURY, Ontario, K6A 1K7

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

Delivery Route 5

Instruction F-M

Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only			
				CMD	EXP	B/O	IN	I	S	OUT
3 ROUND ALU 3 3/4 6061-T6 NS RAL-334 10134 <i>1 X 12'</i> <i>HEAT: 201805092</i> <i>LINE#3</i>	155.88	12.00	PI_\$CLB		1 X 12'		12'		MAY 11 2018	DAS 11 9-89
4 ROUND ALU 3/4 6061-T6 * RAL-34 5157 <i>2 X 20'</i> <i>LINE#4</i> <i>HEAT: 68706</i>	20.92	40.00	PI_\$CLB		2 X 20'		40'		MAY 11 2018	DAS 11 9-89
5 FLAT ALU 3/4 X 8 6061-T6 * FAL-348 2603 <i>1 X 12'</i>	84.96	12.00	PI_\$CLB		1 X 12'		12'		MAY 11 2018	DAS 11 9-89

NIR : R-109516-6

Next Page...



DELIVERY - CLIENT

CO00087288

ACIER OUELLETTE INC.
935, Boul. du Havre
Salaberry de Valleyfield (Québec) J6S 5L1
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

Customer N° CLI0001056
Date 2018/05/02
Delivery date **2018/05/11**

Your order N° PO039776

Processed by Eric Kaehlert

Salesman

Carrier OUELLETTE VALLEYFIELD

Credit Terme Net 30 Days

Page 3

Shipped to

Billed to
DART AEROSPACE LTD

1270 , ABERDEEN ST.
HAWKESBURY, Ontario, K6A 1K7

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

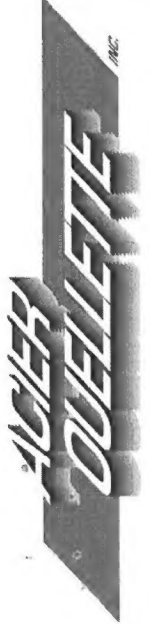
Delivery Route 5

Instruction F-M

Product Description	Weight	Qty	U/M	PCS NB				Internal Use Only			
				CMD	EXP	B/O	IN	I	S	C	OUT
LINE#5 HEAT : 892190 6 FLAT ALU 3/4 X 1 1/2 6061-T6 * FAL-34112 2584 1 X 20'	27.00	20.00	PL \$CLB		1 X 20'						
LINE#6 HEAT: 68549 7 ROUND SS 7/16 304 (R) RSS-716 5779 1 X 12' R/L	6.13	12.00	PL \$CLB		1 X 13.3'						
LINE#7 HEAT: CH-6643											

NIR : R-109516-6

Next Page...



ACIER OUELLETTE INC.

935, Boul. du Hâvre
Salaberry de Valleyfield (Québec) J6S 5L1
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

DELIVERY - CLIENT

CO00087288

Customer N° CLI0001056
Date 2018/05/02
Delivery date **2018/05/11**
Your order N° PO039776

Billed to

DART AEROSPACE LTD
1270 , ABERDEEN ST.
HAWKESBURY, Ontario, K6A 1K7

Shipped to

Processed by Eric Kaehlert
Salesman
Carrier OUELLETTE VALLEYFIELD
Credit Terme Net 30 Days

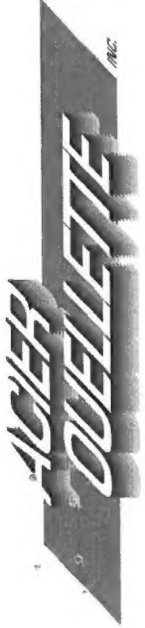
Att : CHANTAL LAVOIE Tél.: 613-632-5200

Page 4

Instruction	F-M	Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only			
						CMD	EXP	B/O	IN	I	S	C
8		ROUND SS 3/8 304 (R) RSS-38 1 X 12' LINE#8 HEAT: 646M	4.51	12.00	PI_\$CLB		11 12 11		12			
9		ROUND 4140 HEAT TREAT 1 (R) R4140-1H 1 X 12' LINE#9 HEAT: 177569	32.04	12.00	PI_\$CLB		11 12		12			

NIR : R-109516-6

Next Page...



DELIVERY - CLIENT

CO00087288

ACIER OUELLETTE INC.

935, Boul. du Hâvre
Salaberry de Valleyfield (Québec) J6S 5L1
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

Customer N° CLI0001056
Date 2018/05/02
Delivery date **2018/05/11**
Your order N° PO039776
Processed by Eric Kaehlert
Salesman
Carrier OUELLETTE VALLEYFIELD
Credit Terme Net 30 Days
Page 5

Shipped to

Billed to
DART AEROSPACE LTD
1270, ABERDEEN ST.
HAWKESBURY, Ontario, K6A 1K7

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

Delivery Route 5

Instruction F-M

Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only			
				CMD	EXP	B/O	IN	I	S	OUT
10 ROUND 4140 HEAT TREAT 1 1/2 (R) R4140-112H 4893 1 X 5'-4" OFF CUT LINE#10 HEAT: 5538982 Lot# Heat 4173444	32.56	5.42	PI_\$CLB		1x 5'4"		5.4'			DAS 11 9-89
11 ROUND SS 3/8 303 (R) RSS-38303 5765 3 X 12' R/L LINE#11 AC16150-SS-2018-05-10 mid test? heat#?	13.54	36.00	PI_\$CLB		3x 13'		39'			DAS 11 9-89

NIR : R-109516-6

Next Page...



ACIER OUELLETTE INC.

935, Boul. du Hâvre
Salaberry de Valleyfield (Québec) J6S 5L1
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

DELIVERY - CLIENT

CO00087288

Billed to

DART AEROSPACE LTD

1270 , ABERDEEN ST.
HAWKESBURY, Ontario, K6A 1K7

Shipped to

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

Customer N°
Date
Delivery date
Your order N°

CLI0001056
2018/05/02
2018/05/11
PO039776

Processed by

Eric Kaehlert

Salesman

Carrier

OUELLETTE VALLEYFIELD

Credit Terme

Net 30 Days

Page

6

Instruction F-M

Delivery Route

5

Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only			
				CMD	EXP	B/O	IN	I	S	OUT
12 ROUND SS 3/4 303 (R) RSS-34303 3 X 12' R/L LINE#12 HEAT: 572C	54.07	36.00	PL_\$CLB		24' 12' 18' 12'		36'		MAY 11 2018	DAS 11 9-89
13 TUBE MEC 1.000 OD X .120 (R) TME-1000120 5 X 20' R/L LINE#13 HEAT: B721446	112.80	100.00	PL_\$CPI		1x 23' 5' 3x22' 12'		111.5'		MAY 11 2018	DAS 11 9-89

NIR : R-109516-6

Next Page...



DELIVERY - CLIENT

CO00087288

ACIER OUELLETTE INC.

935, Boul. du Hâvre
Salaberry de Valleyfield (Québec) J6S 5L1
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

Customer N° CL10001056
Date 2018/05/02
Delivery date **2018/05/11**
Your order N° PO039776
Processed by Eric Kaehlert
Salesman OUELLETTE VALLEYFIELD
Carrier Net 30 Days
Credit Terme
Page 7

Shipped to

DART AEROSPACE LTD
1270, ABERDEEN ST.
HAWKESBURY, Ontario, K6A 1K7

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

Delivery Route 5

Instruction	F-M	Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only			
						CMD	EXP	B/O	IN	I	S	C
14		PLATE 4140 HEAT TREAT 1/2 NS P4140-12H 8509 1 X 10" X 48" LINE#14 AC15947-FU-2018-05-10 HEAT: 300188	68.00	3.33	PT2_\$CLB		1 X 10" X 49"		41			

NOTE: ** CERTIFICATES WITH SHIPMENT FOR ALL ITEMS. **

Total Weight (Lbs) : 677.30

NIR : R-109516-6

Conditions :
All sold and delivered materials remain the property of "Acier Ouellette Inc." until payment is made in full, complete and cashed. All lost materials are at the buyer's expense. The warranty offered by "Acier Ouellette Inc." is the same as offered and honored by the manufacturer and his warranty is transferred by "Acier Ouellette Inc." to the client. The buyer hereby accepts to respect the following conditions: Net 30 days from billing date and the buyer accepts to pay administration charges of 2% per month (24% per annum) on all past due amounts over 30 days. Any default in respect with this contract will lead to payment by acceleration and permits to the seller, at his choice to claim for the balance due or the repossession of the goods sold. All claims must be made within five (5) days with this document enclosed. Any merchandise that has been damaged, cut or modified cannot be returned. All goods returned must be with our authorization and are subject to a 25% restocking charge.

Total (\$CAD)

Prepared By :	Verified By :	Delivered By :	Time

Customer's Signature

Date

Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada
Tel (613) 632-5200



PURCHASE ORDER

PO039776

Supplier:

AC1001-VC
Acier Ouellette Inc.
935 Boul. Du Havre
Valleyfield
QC
J6S 5L1 Canada
Phone: 800 667 4248
Fax: 450 377 5696

Ship To:

1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

PO No:

PO039776

PO Date:

5/2/18

Due Date:

5/7/18

Purchase Order

Revision:

Revision Date:

Ship-To Contact:

Lavoie, Chantal/Phone:
clavoie@dartaero.com

Via:

Ground
Net 30

Payment Terms:

Net 30

Freight Terms:

Special Comments: quote no. sou0102645 and sou0103206

E-MAILED
MAY 03 2018

RTVISED

Line	Item	Part	Supplier	Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
------	------	------	----------	---------	-------------	--------	----------	----------------	-------------------	---------	------------------	----------------

1		M5052H32S.040			5052-H32 .040 Sheet	Firmed	5/7/18	64 sf	0 sf	64 sf	\$2.341875/sf	\$149.88
---	--	---------------	--	--	---------------------	--------	--------	-------	------	-------	---------------	----------

					ALUMINUM SHEET AS PER QQ-A-250/8 OR AMS-QQ-A-250/8 OR AMS 4016 OR ASTM B209							
					: MATERIAL: 5052-H32							
					5052-H32 .032 Sheet	Firmed	5/7/18	64 sf	0 sf	64 sf	\$1.9660937/sf	\$125.83

					ALUMINUM ROUND BAR T6/T651/T6510/T6511/T62							
					AS PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117							
					4128/4115/4116 OR QQ-							
					AA-200/8 OR AMS-QQ-A-							
					200/8 OR AMS 4160 OR							
					ASTM B221 OR ASTM							
					B221							

3		M6061T6R3.750			6061-T6 Round Bar	Firmed	5/7/18	12 ft	0 ft	12 ft	\$52.73333/ft	\$632.80
---	--	---------------	--	--	-------------------	--------	--------	-------	------	-------	---------------	----------

Line Item Note please cut in 2 pcs of 6 ft

Line Item	Part	Supplier	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
-----------	------	----------	-------------	--------	----------	----------------	-------------------	---------	------------------	----------------

4	M6061T6R0.750		6061-T6 Round Bar .750"	Firmed	5/7/18	40 ft	0 ft		\$1.55/ft	\$62.00
---	---------------	--	-------------------------	--------	--------	-------	------	--	-----------	---------

5	M6061T6B0.750X08.000		6061-T6 Bar .750" X 8.00" ALUMINUM ROUND BAR T6/T651/T6510/T6511/T62 AS PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117 4128/4115/4116 OR QQ- AA-200/8 OR AMS-QQ-A- 200/8 OR AMS 4160 OR ASTM B221 OR ASTM B221 receive ft	Firmed	5/7/18	12 ft	0 ft		\$20.95/ft	\$251.40
---	----------------------	--	--	--------	--------	-------	------	--	------------	----------

6	M6061T6B0.750X01.500		6061-T6 Bar .750 X 1.50 ALUMINUM BAR PER T6/T651/T6510/T6511/T62 QQ-A-225/8 OR AMS-QQ- A-225/8 OR AMS 4117/4128/4115/4116 OR QQ-A-200/8 OR AMS-QQ- A-200/8 OR AMS 4160 OR ASTM B211 OR ASTM B221 receive ft	Firmed	5/7/18	20 ft	0 ft		\$4.00/ft	\$80.00
---	----------------------	--	---	--------	--------	-------	------	--	-----------	---------

7	M304R0.4375		304 Round Bar 0.4375 : MATERIAL: AISI 304/316 SS ROUND BAR AS PER ASTM A276 NOTE: AISI 303 NOT ACCEPTABLE receive ft	Firmed	5/7/18	12 ft	0 ft		\$1.72/ft	\$20.64
---	-------------	--	---	--------	--------	-------	------	--	-----------	---------

8	M304R0.375		304 Round Bar 0.375 : MATERIAL: AISI 304/316 SS ROUND BAR AS PER ASTM A276 NOTE: AISI 303 NOT ACCEPTABLE receive ft	Firmed	5/7/18	12 ft	0 ft		\$13.02/ft	\$156.24
---	------------	--	--	--------	--------	-------	------	--	------------	----------

9	M4140H-R1.000		4140 round bar 1.00 : AISI 4140H ROUND BAR PER AISI 4140OR ASTM A304-02/-A-434- BC/-A193-03-GRADE B7/- A29-03/-A322-91 OR UNS#-G41400 MINIMUM ULTIMATE TENSILE STRENGTH=100 KSI MINIMUM YIELD TENSILE STRENGTH=66KSI	Firmed	5/7/18	12 ft	0 ft		\$4.43/ft	\$53.16
---	---------------	--	---	--------	--------	-------	------	--	-----------	---------

PURCHASE ORDER

Line Item	Part	Supplier	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
-----------	------	----------	-------------	--------	----------	----------------	-------------------	---------	------------------	----------------

10	M4140H-R1.500		4140 Round Bar 1.500	Firmed	5/7/18	6 ft	0 ft		\$9.61/ft	\$57.66
----	---------------	--	----------------------	--------	--------	------	------	--	-----------	---------

: AISI 4140H ROUND BAR PER AISI4140OR ASTM A304-02/-A434- BC-A193-03-GRADE B7/- A29-03/-A322-91 OR UNS#-G41400 MINIMUM ULTIMATE TENSILE STRENGTH=100 KSI MINIMUM YIELD TENSILE STRENGTH=66KSI receive ft										
11	M303R0.375		303 Round Bar 0.375"	Firmed	5/7/18	36 ft	0 ft		\$1.43/ft	\$51.48
: MATERIAL: AISI 303 SS ROUND BAR AS PER ASTM A582 NOTE:304/316 NOT ACCEPTABLE receive ft										
12	M303R0.750		303 Round Bar 0.750	Firmed	5/7/18	36 ft	0 ft		\$4.85/ft	\$174.60
: MATERIAL: AISI 303 SS ROUND BAR AS PER ASTM A582 NOTE:304/316 NOT ACCEPTABLE receive ft										

13	MT-A513-T-1.000W0.120		A513 Seamless Alloy Steel Round Tubing 1"dia. x 0.120" Wall	Firmed	5/7/18	100 ft	0 ft		\$2.47/ft	\$247.00
: MATERIAL: 6061-T6/T62 ALUMINUM SHEET AS PER QQ-A-250/11 OR AMS-QQ-A-250/11 OR AMS 4025 OR AMS 4027 OR ASTM B209 receive sf										
14	MT-4140-S-0.500X10.000		AISI 4140 Steel Sheet/Plate	Firmed	5/7/18	4 ft	0 ft		\$58.81/ft	\$235.24
15	M6061T6S.625		6061-T6 .625 Sheet	Firmed	5/10/18	32 sf	0 sf		\$35.60531/sf	\$1,139.37

Line Item Note 2 pcs of 4 ft x 4ft										
16	M6061T6S4.500X12.000		6061T6 sheet 4.500 X	Firmed	5/7/18	16.667 ft	0 ft		\$339.00135/ft	\$5,650.14
12.000 (Cut to 20.000") : MATERIAL: 6061- T6/T651/T6510/T6511/T62 ALUMINUM BAR PER QQ-A-225/8 OR AMS-QQ- A-225/8 OR AMS 4117/4128/4115/4116 OR QQ-A-200/8 OR AMS-QQ- A-200/8 OR AMS 4160 OR ASTM B211 OR ASTM B221 receive ft										

Line Item Note 10 pcs of 4.5" x 12" cut at 20" long

MAY 11 2018

17

32

0 ft

4 ft

0 ft

111.5

0 ft

36

0 ft

36

0 ft

36

0 ft

5-4

0 ft

6 ft

0 ft

PURCHASE ORDER

Items

Line Item	Part	Supplier	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
17	M6061T6R10.000		6061-T6 Round Bar 10.00" : MATERIAL: 6061-T6/T651/T6510/T6511/T6512 ALUMINUM ROUND BAR AS PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117 4128/4115/4116 OR QQ-A-200/8 OR AMS-QQ-A-200/8 OR AMS 4160 OR ASTM B221 OR ASTM B221 receive fit	Firmed	5/7/18	3 ft	0 ft	\$434.4466/ft		\$1,303.34
18	MT-A513-T-0.750W0.058		A513 Seamless Alloy Steel Round Tubing 0.75"dia. x 0.058" Wall	Firmed	5/10/18	20 ft	0 ft	\$15.25/ft		\$305.00

Line Item Note ASTM A513 TYPE 5 (1020/1026) SEAMLESS ALLOY STEEL ROUND TUBING (DOM)

Grand Total: \$10,695.78

Order Notes

Procurement Quality Clauses
A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)
A026 certification of material conformance
A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents
A048 counterfeit parts avoidance, detection, mitigation and disposition program
A049 supplier awareness
Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.darttaerospace.com for further explanation.

Plex 5/3/18 11:26 AM dart.lavoie.chantal

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M.T. A513-T-0250 W0.058 PO / BATCH NO.: 039776/5070831 DATE: MAY 12 2018

MATERIAL CERT REC'D: YES QUANTITY RECEIVED: 241 QUANTITY INSPECTED: 241 QUANTITY REJECTED: 0

THICKNESS ORDERED: W0.058 THICKNESS RECEIVED: W0.058 SHEET SIZE ORDERED: N/A SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="radio"/> Y	
CORRECT FINISH	<input checked="" type="radio"/> Y	
CORROSION	<input checked="" type="radio"/> Y	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="radio"/> Y	
CORRECT THICKNESS	<input checked="" type="radio"/> Y	
PHOTO REQUIRED	<input checked="" type="radio"/> Y	
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y	
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="radio"/> Y	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="radio"/> Y	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.				
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

Testers located in the Quality Office

QC 18 INSPECTION ENGINEERING SIGNOFF (if required)

INSPECTED BY: 11 DATE: MAY 12 2018

SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

REV.	DESCRIPTION	ECN #	DATE	BY	APPROVED
A	NEW RELEASE	17.655	17.09.06	VM	VM
B	TYPE 5 ADDED, TEMPLATE UPDATED	17.790	17.12.13	VM	ML

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: ASTM A513 TYPE 5 (1020/1026) SEAMLESS ALLOY STEEL ROUND TUBING (DOM)

SPECIFICATION: ASTM A513 TYPE 5


PART NUMBER:

MT-A513-T-D.DDDJW(T.TT)

WHERE D.DDD IS OUTSIDE DIAMETER IN INCHES

WHERE T.TT IS WALL THICKNESS IN INCHES

EG. 3/4" ROUND TUBING WITH .120" WALL THICKNESS = MT-A513-T-0.750W0.120

 DART AEROSPACE <small>Hambleton, Ontario, Canada</small>		TITLE	
		ASTM A513 TYPE 5 (1020/1026) ALLOY STEEL ROUND TUBING (DOM)	
PART NO		REV	
MT-A513-T		B	
TOLERANCES UNLESS OTHERWISE SPECIFIED		DIMENSIONS ARE IN INCHES	
FRACTIONS ARE TO BE SHOWN AS DECIMALS		DIMENSIONS APPLY AFTER FINISHING	
DESIGNED BY: VM 17/12/13		CHECKED BY: VM 17/12/13	
DRAWN BY: VM 17/12/2017		APPROVED BY: VM 17/12/2017	
CHECKED BY: ML 12/02/2017		APPROVED BY: ML 12/02/2017	
APPROVED BY: ML 12/02/2017		SCALE: NTS	
SHEET 1 OF 1		DART AEROSPACE LTD	

CERTIFICATE OF TEST

Page 01 of 01

Certification Date 9-MAY-2018

CUSTOMER ORDER NUMBER

AC15914

CUSTOMER PART NUMBER

101647

SOLD TO:

ACIER OUELLETTE INC.
DIVISION SALABERRY-DE-VALLEYFIELD

SHIP TO:

ACIER OUELLETTE INC.
DIVISION SALABERRY-DE-VALLEYFIELD
935, BOUL DU HAVRE
SALABERRY-DE-VALLEYFIELD QC J6S 5L1
SALABERRY-DE-VALLEYFIELD QC J6S 5L1

Description:

1020 DOM SRA

A513/5

750 OB X 634 ID 1.058 W/X 20/24 R/L

ITEM: 101647

HEAT: A718541

Specifications:

ASTM A513 TP 5 M

ASTM A309 11

CHEMICAL ANALYSIS

C	MN	P	S	SI	CU	NI	V
0.20	0.45	0.01	0.005	0.02	0.09	0.03	0.004

TI	AL
0.001	0.024

RCPT: R431089

COUNTRY OF ORIGIN : USA

MECHANICAL PROPERTIES

DESCRIPTION	YLD STR	PSI	UL T TEN	PSI	%ELONG	IN 02 IN	%RED	IN AREA	HARDNESS	BHN
	89500.0		98300.0		16.0					95

FLATTEN: Y FLARE: Y CRUSH: Y

MATERIAL IS FREE FROM MERCURY CONTAMINATION
NO WELD REPAIR PERFORMED ON MATERIAL

COMMENTS

reduction ratio 10-1
drawn in the usa

TERRY GALBRAITH

Material did not come in contact with mercury while in our possession.

The above data were transcribed from the manufacturer's Certificate of Test after verification for completeness and specification requirements of the information on the certificate. All test results remain on file subject to examination.

We hereby certify that the material covered by this report will meet the applicable requirements described herein, including any specification forming a part of the description.

The willful recording of false, fictitious, or fraudulent statements in connection with test results may be punishable as a felony under federal statutes.

MANAGER, CORPORATE PURCHASING

15914N

87281

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M60616R10.000 DATE: MAY 12 2018

PO / BATCH NO.: 039726/5070830

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 3
 QUANTITY INSPECTED: 3
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 10.000
 THICKNESS RECEIVED: 10.000
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="checkbox"/>	
CORRECT FINISH	<input checked="" type="checkbox"/>	
CORROSION	<input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/>	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/>	
CORRECT THICKNESS	<input checked="" type="checkbox"/>	
PHOTO REQUIRED	<input checked="" type="checkbox"/>	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/>	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/>	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.				
HRC	HRB	DUR A	DUR D	WEBSTER
RECORD RESULTS BELOW				
TYPE OF MATERIAL				
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

Testers located in the Quality Office

QC 18 INSPECTION
 ENGINEERING SIGNOFF (if required)
 INSPECTED BY: 11
 DATE: 9-89 MAY 12 2018
 SIGNED OFF BY: _____
 DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM ROUND BAR

SPECIFICATION:

QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4174/1284/154/116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B21

PART NUMBER:

M6061T6R/D DDD
DIA.

WHERE "D DDD" = DIAMETER IN INCHES

EG. 5/8" ROUND BAR = M6061T6R0.625

B	REFORMAT DWG, ADD B2116, B221 SPEC (2N D8-1),	CP	09.07.13
A	REF PAR 08-020A	DS	01.06.08
REV.	NEW ISSUE	BY	DATE
DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. B
MFG. APPR.		M6061T6R	SHEET 1 OF 1
APPROVED		TITLE	SCALE
DE APPR		6061-T6 ROUND BAR	NTS
DATE	09.07.13	COPYRIGHT © 2011 BY DART AEROSPACE LTD.	

RELEASED
2009-09-09
M/D

15913



Hydro Extrusion USA, LLC
33 POTTSVILLE STREET
CRESSONA, PA
17929-0187

Certified Test Report

Sales Order Number	Line No.	Customer P/O	Cert Number	Page
1101374515	1	5400397994-C1A-0010	HYDRO2861554	1 of 3
			Cert Creation Date	Cert Print Date
			24-APR-18	30-APR-18

Invoice To Customer

Ship To Customer

Quantity Shipped	Unit	Date Shipped	Item Description	Specifications
4434	LB	24-APR-18	Extruded Regular Rod 10.000 DIA SECT 542329 144.000 IN LN FIN M-MILL W.G. 27.384 F 1 10.10 6061T6 Marking CONTINUOUS.	ASTM B221 REV 14 ASM E5721 REV 09 AMS-QQ-A-200/8 REV A UNSA96061 REV
B/L		Item No.		
921960		G03976730		
Delivery Id		Item No. Rev		
4994493				
Customer Part No.				
ALRD00259				

Applicable Specifications, Revisions and Exceptions

Straightness will be 0.050 inch/foot maximum
Residual cast structure may remain in finished product because of low reduction ratio.
COMPOSITION NOTE: The values for 'Others Each' and 'Others Total' have met the limits as shown on this certified inspection report. Remainder is Aluminum.

Hydro Extrusion USA, LLC hereby certifies that the metal shipped under this report has been tested in accordance with the identified ASTM and/or ASME specifications and the results of the chemical analysis and mechanical properties tests are within the acceptable ranges of these specifications. Any product warranty is governed by the Extrusion North America Standard Terms and Conditions of Sale posted at www.hydroextrusions.com/termsandconditions.

Signature And Title
Darrell Weirich
Darrell Weirich
Quality Manager

24-APR-18

Quantities per Lot / Packages

Package Number	Lot Number	Quantity	UOM	Weight	
				Gross	Net
G12-PKG3204958	23135192	2	PCS	2223	2217
G12-PKG3204968	23135192	2	PCS	2223	2217

Composition Limits



Hydro Extrusion USA, LLC
53 POTTSVILLE STREET
CRESSONA, PA
17929-0187

Certified Test Report

Certified Test Report				
Sales Order Number	Line No.	Customer P/O	Cert Number	Page
1101374515	1	5400397994-CIA-0010	HYDRO2861554	Page 2 of 3
			Cert Creation Date	Cert Print Date
			24-APR-18	30-APR-18

Alloy	Si		Fe		Cu		Mn		Mg		Cr		Zn	
	PCT (%)		PCT (%)		PCT (%)		PCT (%)		PCT (%)		PCT (%)		PCT (%)	
6061	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
	0.40	0.80	---	0.70	0.15	0.40	---	0.15	0.80	1.20	0.04	0.35	---	0.25
Alloy	Ti		Others Each		Others Total									
	PCT (%)		PCT (%)		PCT (%)									
6061	Min	Max	Min	Max	Min	Max								
	---	0.15	---	0.05	---	0.15								

Composition Report

Heat / Cast	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others Each	Others Total
4042702	0.77	0.35	0.36	0.12	0.93	0.14	0.05	0.03	--	--
Heat / Cast	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others Each	Others Total
4042730	0.73	0.29	0.33	0.15	0.93	0.14	0.04	0.02	--	--

Mechanical Property - Test Limits

Heat Temper	Test Type		UTS - L		TYS - L		EL 4D-Long	
	UOM		KSI		KSI		PCT	
T6	# of Test		---		---		---	
	Lot Number	# of Tests	MIN Value	MAX Value	MIN Value	MAX Value	MIN Value	MAX Value
T6	23135192	1	53.5	53.5	48.1	48.1	11.5	11.5

Cert Notes

Products manufactured with a T6511 temper also meet T6 temper requirements.

Yield strength has been determined by the 0.2% offset method

All mill finish alloys produced at Sapa Extrusions Inc comply with Directive 2011/65/EU (RoHS 2) with the exception of 6262 alloy

In accordance with EN 10204 Inspection Certificate Type 3.1

For U.S. Government sales: Items supplied are compliant with the Buy American Act, FAR 52.225-1, and DFARS 252.225-7001.

Melted and manufactured in the USA.

Mercury is not a normal contaminant in aluminum alloys and we do not knowingly use it in the manufacture of our goods



Hydro Extrusion USA, LLC
53 POTTSVILLE STREET
CRESSONA, PA
17929-0187

Certified Test Report

Cert Number			Page	
HYDRO2861554			Page	3 of 3
Sales Order Number			Cert Creation Date	
1101374515			24-APR-18	
Line No.			Cert Print Date	
1			30-APR-18	
Customer P/O				
5400397994-C1A-0010				

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061HS4500X12.000 DATE: MAY 12 2019
 PO / BATCH NO.: 039776/5020829

THICKNESS ORDERED: <u>4.500</u>	MATERIAL CERT REC'D: <u>Yes</u>
THICKNESS RECEIVED: <u>4.500</u>	QUANTITY RECEIVED: <u>17.10PCS</u>
SHEET SIZE ORDERED: <u>N/A</u>	QUANTITY INSPECTED: <u>17.10PCS</u>
SHEET SIZE RECEIVED: <u>N/A</u>	QUANTITY REJECTED: <u>0</u>

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="radio"/> Y	
CORRECT FINISH	<input checked="" type="radio"/> Y	
CORROSION	<input checked="" type="radio"/> Y	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="radio"/> Y	
CORRECT THICKNESS	<input checked="" type="radio"/> Y	
PHOTO REQUIRED	<input checked="" type="radio"/> Y	
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y	
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="radio"/> Y	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="radio"/> Y	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.				
RECORD RESULTS BELOW				
HRC	HRB	DUR A	DUR D	WEBSTER

Testers located in the Quality Office

QC 18 INSPECTION
 ENGINEERING SIGNOFF (if required)
 INSPECTED BY: DAS
 SIGNED OFF BY: _____
 DATE: 9-89 MAY 12 2019
 DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

△ PURCHASE MATERIAL: 6061-T6/T62/T651 ALUMINUM SHEET OR PLATE

SPECIFICATION:
QQ-A-250/11 OR AMS-QQ-A-250/11
OR AMS 4025 OR 4027
OR ASTM B209

△ PART NUMBER:
M6061T6S | XXX | X | W.W.W.W |
| THK | | WIDTH |

WHERE "XXX" = THICKNESS (IN INCHES)
AND "W.W.W.W" = WIDTH (IN INCHES, OPTIONAL, FOR SPECIFYING CUT PLATE)

EG. 0.063" THICK SHEET = M6061T6S.063
EG. 3.5" WIDE BY 0.500" THICK PLATE = M6061T6S.500X3.500

△ PREFERRED SIZE:
XXX BY 4FT BY 8FT FOR SHEET

PREPARED
2018 MAR 13
EJ 18-695

APPROVED

C	ADD PLATE AND T651 SPEC	ML	17.12.13
B	REFORMAT DWG. ADD B209 SPEC (2N DR-1)	CP	09.07.13
A	NEW ISSUE	RF	01.06.08
REV.	DESCRIPTION	BY	DATE
DESIGN	DS		
DRAWN	ML		
CHECKED	NO		
MFG. APPR.	JFS		
APPROVED	HS		
DE APPR.	CP		
DATE	17.12.13		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. M6061T6S			
TITLE 6061-T6 SHEET/PLATE SPEC			
REV. C			
SHEET 1 OF 1			
SCALE			
MKS			

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15913N

On behalf: KUMZ J.S.Co.
Date: 28.12.2017
QCS Inspector: Gurva V.N.
Inspection Department Engineer: Alekhya N.V.

[illegible]

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061H65.625 DATE: MAY 12 2018

MATERIAL CERT REC'D: YES
 QUANTITY RECEIVED: 32012
 QUANTITY INSPECTED: 32012
 QUANTITY REJECTED: 0

PO / BATCH NO.: 039776/5020228

THICKNESS ORDERED: 0.625
 THICKNESS RECEIVED: 0.625
 SHEET SIZE ORDERED: 4X4
 SHEET SIZE RECEIVED: 4X4

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="checkbox"/>	
CORRECT FINISH	<input checked="" type="checkbox"/>	
CORROSION	<input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/>	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/>	
CORRECT THICKNESS	<input checked="" type="checkbox"/>	
PHOTO REQUIRED	<input checked="" type="checkbox"/>	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/>	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/>	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.				
RECORD RESULTS BELOW				
HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL				
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

Testers located in the Quality Office

QC 18 INSPECTION
 ENGINEERING SIGNOFF (if required)
 INSPECTED BY: DAS
 DATE: MAY 12 2018
 SIGNED OFF BY: _____
 DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: 6061-T6 0.083" THICK ALUMINUM SHEET OR PLATE
SPECIFICATION: 06-A-250/11 OR AMS-QQ-A-250/11
OR ~~AMS-1025~~ OR 4027
OR ASTM B209

PART NUMBER:

M6061T6S | XXX | X | W | WWW |
THK | WIDTH |

WHERE "XXX" = THICKNESS (IN INCHES)
AND "W.WWWW" = WIDTH (IN INCHES), OPTIONAL, FOR SPECIFYING CUT PLATE)
EG. 0.083" THICK SHEET = M6061T6S.063
EG. 3.5" WIDE BY 0.500" THICK PLATE = M6061T6S.500X3.500

PREFERRED SIZE:

.XXX BY 4FT BY 8FT FOR SHEET

RELEASED
2018 MAR 13
ECU 18-6065

APPROVED

REV.		DESCRIPTION	BY	DATE
C	ADD PLATE AND T661 SPEC		ML	17.12.13
B	REFORMAT DWG, ADD 6208 SPEC (ZN DB-1), REF PAR 09.020A		CP	08.07.13
A	NEW ISSUE		RF	01.08.08
DESIGN		DS		
DRAWN		ML		
CHECKED		NO		
MFG. APPR.		JFS		
APPROVED		HS		
DE APPR.		CP		
DATE		17.12.13		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA				
DRAWING NO. M6061T6S				
TITLE 6061-T6 SHEET/PLATE SPEC				
REV. C				
SHEET 1 OF 1				
SCALE NTS				

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MILL TEST / QUALITY CONTROL CERTIFICATE

NORTHEAST LIGHT ALLOY CO. LTD.

ADDRESS: XINJIANG STREET, PINGFANG DISTRICT, HARBIN

REF: M17084

No. of Invoice: 17NE-084

PRODUCT: PRIME ALUMINUM PLATE 6061 T651

TEST DATE: 2017-08-30

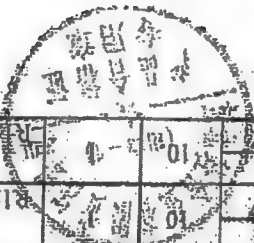
1. MATERIAL SPECIFICATION:

Alloy	Temp	LOT NO.	SIZE (MM/MCH)	N.W. (MT/LBS)	O.W. (MT/LBS)	PCS	PLTS	Order No.	HBAT NO.
6061 T651		L.T01097	9.53x1231.9x3670.3 (0.375"x48.5"x144.5")	1.804	4178	15	1	R153879	17CN-B-1744
6061 T651		L.T01097	9.53x1231.9x3670.3 (0.375"x48.5"x144.5")	1.924	4440	16	1	R153879	17CN-B-1745
6061 T651		T001361	9.53x1231.9x2461.1 (0.375"x48.5"x98.5")	2.456	5437	31	1	R153879	17CN-B-1736
6061 T651		T001361	9.53x1231.9x3670.3 (0.375"x48.5"x144.5")	1.812	4216	12	1	R153879	17CN-B-1738
6061 T651		T00883	16.88x1231.9x3670.3 (0.625"x48.5"x144.5")	2.792	6156	14	1	R154148	17CN-B-1647
6061 T651		T00884	50.8x1231.9x3670.3 (1.25"x48.5"x144.5")	2.74	6041	7	1	R154152	17CN-E-1611
6061 T651		T00885	50.8x1231.9x3670.3 (1.25"x48.5"x144.5")	1.836	4158	3	1	R154152	17CN-B-1613
6061 T651		T00885	50.8x1231.9x3670.3 (1.25"x48.5"x144.5")	1.26	2778	2	1	R154152	17CN-B-1616
6061 T651		T00888	9.53x1231.9x3670.3 (0.375"x48.5"x144.5")	1.788	4026	14	1	R154153	17CN-E-1748
6061 T651		T00889	12.7x1231.9x3670.3 (0.500"x48.5"x144.5")	2.412	5539	16	1	R154153	17CN-E-1757
6061 T651		T00890	12.7x1231.9x3670.3 (0.500"x48.5"x144.5")	2.502	5816	15	1	R154153	17CN-B-1746
6061 T651		T00891	16.88x1231.9x3670.3 (0.625"x48.5"x144.5")	1.88	3704	8	1	R154153	17CN-B-1625
6061 T651		T00891	16.88x1231.9x3670.3 (0.625"x48.5"x144.5")	1.386	3078	7	1	R154153	17CN-E-1626
6061 T651		T00892	19.08x1231.9x3670.3 (0.75"x48.5"x144.5")	1.928	4449	8	1	R154153	17CN-E-1632
6061 T651		T00892	19.08x1231.9x3670.3 (0.75"x48.5"x144.5")	0.962	2121	4	1	R154153	17CN-B-1633
6061 T651		T00894	12.7x1231.9x3670.3 (0.500"x48.5"x144.5")	2.556	5636	16	1	R154173	17CN-B-1753
6061 T651		T00898	12.7x1231.9x2461.1 (0.500"x48.5"x98.5")	2.478	5696	23	1	R154173	17CN-B-1735



TEL: 86-461-68604263
FAX: 86-461-6860342

PA6 58V



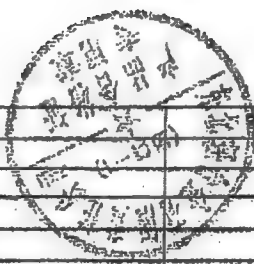
6061T651	T00863	9.53x1536, 7x3670, 3 (0.375'X60.5'X144.5')	3307	3527	1.6	10	R154318	17CN-E-1585
6061T651	T00863	9.53x1536, 7x3670, 3 (0.375'X60.5'X144.5')	3307	3527	1.6	10	R154318	17CN-E-1584
6061T651	T00862	9.53x1536, 7x3670, 3 (0.375'X60.5'X144.5')	3988	4189	1.9	12	R154318	17CN-E-1517
6061T651	T00862	9.53x1536, 7x3670, 3 (0.375'X60.5'X144.5')	4299	4519	2.05	13	R154318	17CN-E-1516
6061T651	T00861	9.53x1536, 7x3670, 3 (0.375'X60.5'X144.5')	4321	4541	2.05	13	R154318	17CN-E-1515
6061T651	T00861	9.53x1536, 7x3670, 3 (0.375'X60.5'X144.5')	4343	4564	2.07	13	R154318	17CN-E-1514
6061T651	T01193	9.53x1231, 9x2451, 1 (0.375'X48.5'X96.5')	1.438	3170	1.498	18	R154318	17CN-E-1752
6061T651	T01192	9.53x1231, 9x2451, 1 (0.375'X48.5'X96.5')	1.718	3788	1.778	21	R154318	17CN-E-1693
6061T651	T01187	19.05x1231, 9x3670, 3 (0.75'X48.5'X144.5')	2.42	5336	2.61	10	R154295	17CN-E-1590
6061T651	T01180	12.7x1231, 9x3670, 3 (0.500'X48.5'X144.5')	2.41	5318	2.5	15	R154295	17CN-E-1692
6061T651	T01179	12.7x1231, 9x3670, 3 (0.500'X48.5'X144.5')	1.9	4189	1.99	12	R154295	17CN-E-1691
6061T651	T00136/T00130-1	9.53x1231, 9x3670, 3 (0.375'X48.5'X144.5')	1.446	3188	1.536	12	R154295	17CN-E-1739
6061T651	T00915	25.4x1231, 9x3670, 3 (1.0'X48.5'X144.5')	1.284	2831	1.374	4	R154173	17CN-E-1664
6061T651	T00915	25.4x1231, 9x3670, 3 (1.0'X48.5'X144.5')	1.81	3648	1.7	5	R154173	17CN-E-1663
6061T651	T00914	25.4x1231, 9x3670, 3 (1.0'X48.5'X144.5')	1.596	3618	1.686	5	R154173	17CN-E-1662
6061T651	T00914	25.4x1231, 9x3670, 3 (1.0'X48.5'X144.5')	1.594	3614	1.684	5	R154173	17CN-E-1661
6061T651	T00913	25.4x1231, 9x3670, 3 (1.0'X48.5'X144.5')	1.586	3486	1.676	5	R154173	17CN-E-1681
6061T651	T00913	25.4x1231, 9x3670, 3 (1.0'X48.5'X144.5')	1.592	3610	1.682	5	R154173	17CN-E-1672
6061T651	T00908	19.05x1231, 9x3670, 3 (0.75'X48.5'X144.5')	2.156	4753	2.246	9	R154173	17CN-E-1618
6061T651	T00908	19.05x1231, 9x3670, 3 (0.75'X48.5'X144.5')	1.918	4228	2.008	8	R154173	17CN-E-1617
6061T651	T00907	19.05x1231, 9x3670, 3 (0.75'X48.5'X144.5')	1.434	3181	1.524	6	R154173	17CN-E-1686
6061T651	T00906	19.05x1231, 9x3670, 3 (0.75'X48.5'X144.5')	1.918	4228	2.008	8	R154173	17CN-E-1683
6061T651	T00906	19.05x1231, 9x3670, 3 (0.75'X48.5'X144.5')	2.396	5282	2.486	10	R154173	17CN-E-1682
6061T651	T00905	19.05x1231, 9x3670, 3 (0.75'X48.5'X144.5')	2.15	4740	2.24	9	R154173	17CN-E-1684
6061T651	T00899	12.7x1231, 9x2451, 1 (0.500'X48.5'X96.5')	2.574	5675	2.684	24	R154173	17CN-E-1734



LOT NO.	Cu	Mg	Mn	Fe	Si	Zn	Ni	Gr	Ti	Others	Al
1701097	0.19	0.90	<0.15	0.37	0.55	<0.20	<0.05	0.18	<0.10	0.15	Bal
T00131	0.23	1.00	<0.15	0.49	0.65	<0.20	<0.05	0.17	<0.10	0.15	Bal
T00132	0.22	1.00	<0.15	0.41	0.63	<0.20	<0.05	0.16	<0.10	0.15	Bal
T00136-1	0.19	0.97	<0.15	0.48	0.68	<0.20	<0.05	0.18	<0.10	0.15	Bal
T00140-1	0.21	1.02	<0.15	0.40	0.68	<0.20	<0.05	0.16	<0.10	0.15	Bal
T00140	0.20	1.01	<0.15	0.37	0.69	<0.20	<0.05	0.15	<0.10	0.15	Bal
T9663	0.20	1.01	<0.15	0.37	0.69	<0.20	<0.05	0.16	<0.10	0.15	Bal
T00883	0.24	0.98	<0.15	0.37	0.67	<0.20	<0.05	0.17	<0.10	0.15	Bal
T00884	0.22	1.01	<0.15	0.38	0.68	<0.20	<0.05	0.17	<0.10	0.15	Bal
T00885	0.24	0.98	<0.15	0.37	0.67	<0.20	<0.05	0.17	<0.10	0.15	Bal
T00888	0.21	1.02	<0.15	0.38	0.68	<0.20	<0.05	0.17	<0.10	0.15	Bal
T00889	0.20	0.99	<0.15	0.36	0.63	<0.20	<0.05	0.17	<0.10	0.15	Bal
T00890	0.21	1.03	<0.15	0.42	0.64	<0.20	<0.05	0.17	<0.10	0.15	Bal
T00891	0.22	1.01	<0.15	0.36	0.66	<0.20	<0.05	0.17	<0.10	0.15	Bal
T00892	0.21	1.03	<0.15	0.36	0.63	<0.20	<0.05	0.17	<0.10	0.15	Bal
T00894	0.24	0.98	<0.15	0.37	0.67	<0.20	<0.05	0.17	<0.10	0.15	Bal
T00898	0.22	1.04	<0.15	0.37	0.65	<0.20	<0.05	0.17	<0.10	0.15	Bal
T00899	0.22	1.01	<0.15	0.36	0.66	<0.20	<0.05	0.17	<0.10	0.15	Bal
T00906	0.20	0.99	<0.15	0.36	0.63	<0.20	<0.05	0.17	<0.10	0.15	Bal
T00908	0.20	1.04	<0.15	0.39	0.65	<0.20	<0.05	0.16	<0.10	0.15	Bal
T00907	0.20	1.04	<0.15	0.39	0.66	<0.20	<0.05	0.16	<0.10	0.15	Bal

2. CHEMICAL COMPOSITION

6061T651	T00193	50.8x1536.7x3670.3 (2.0'X60.5'X144.5')	3456 1.572	3686 1.672	2	1	R154318	17CN-E-1131
6061T651	T00192	50.8x1536.7x3670.3 (2.0'X60.5'X144.5')	3444 1.562	3664 1.562	2	1	R154318	17CN-E-1139
6061T651	T00191	50.8x1536.7x3670.3 (2.0'X60.5'X144.5')	3457 1.568	3677 1.568	2	1	R154318	17CN-E-1150
6061T651	T01241	25.4x1231.9x2451.1 (1.0'X48.5'X96.5')	5154 2.338	5287 2.398	11	1	R154318	17CN-E-1685
6061T651	T01236	25.4x1231.9x3670.3 (1.0'X48.5'X144.5')	2795 1.268	2984 1.358	4	1	R154318	17CN-E-1555
6061T651	T01236	25.4x1231.9x3670.3 (1.0'X48.5'X144.5')	3458 1.582	3686 1.672	5	1	R154318	17CN-E-1554
6061T651	T01206	15.88x1231.9x3670.3 (0.625'X48.5'X144.5')	2646 1.2	2844 1.28	6	1	R154318	17CN-E-1600
6061T651	T01206	15.88x1231.9x3670.3 (0.625'X48.5'X144.5')	3078 1.386	3278 1.486	7	1	R154318	17CN-E-1599
6061T651	T01205	15.88x1231.9x3670.3 (0.625'X48.5'X144.5')	3091 1.402	3289 1.492	7	1	R154318	17CN-E-1597
6061T651	T01205	15.88x1231.9x3670.3 (0.625'X48.5'X144.5')	3100 1.406	3298 1.496	7	1	R154318	17CN-E-1596
6061T651	T00864	9.53x1536.7x3670.3 (0.375'X60.5'X144.5')	3286 1.49	3506 1.59	10	1	R154318	17CN-E-1519
6061T651	T00864	9.53x1536.7x3670.3 (0.375'X60.5'X144.5')	3286 1.49	3506 1.59	10	1	R154318	17CN-E-1518



LOT NO.	TENSILE STRENGTH (ksi)	YIELD STRENGTH (ksi)	Percentage elongation after fracture (%)
1T01087	42.9	37.1	18.10
T01181	45.1	39.9	16.70
T01132	45.0	38.9	16.20
T00130-1	43.8	38.6	17.10
T00140-1	44.2	38.4	18.00
L700141-1	43.8	38.6	17.90
T00140	43.9	38.4	18.00
T9664	44.1	38.7	17.80
T00883	44.1	40.2	15.00
T00884	43.9	39.7	16.80
T00885	45.0	40.9	12.70
T00888	43.5	38.3	17.00
T00889	44.4	39.8	15.40
T00890	44.8	39.8	16.10
T00891	43.8	39.7	15.90
T00892	43.8	39.2	13.20
T00894	44.2	39.2	15.90
T00898	46.0	40.6	16.00
T00899	45.0	40.8	18.60
T00905	44.2	40.2	14.40
T00906	44.7	40.6	14.00
T00907	44.2	39.9	14.40
T00908	44.8	40.0	14.20
T00913	43.2	38.4	15.70

3. MECHANICAL PROPERTIES:

Tensile properties conform to AA specifications and are measured in the transverse direction.

All figures are weight percent, single figures indicate maxima.

T00908	0.21	1.08	<0.15	0.38	0.63	<0.20	<0.05	0.16	<0.10	0.15	Bal
T00913	0.22	1.05	<0.15	0.37	0.55	<0.20	<0.05	0.17	<0.10	0.15	Bal
T00914	0.22	1.02	<0.15	0.36	0.55	<0.20	<0.05	0.17	<0.10	0.15	Bal
T00915	0.22	1.01	<0.15	0.38	0.68	<0.20	<0.05	0.17	<0.10	0.15	Bal
T00136	0.19	0.87	<0.15	0.46	0.66	<0.20	<0.05	0.16	<0.10	0.15	Bal
T00130-1	0.19	0.87	<0.15	0.46	0.66	<0.20	<0.05	0.16	<0.10	0.15	Bal
T00129-1	0.21	1.04	<0.15	0.40	0.63	<0.20	<0.05	0.17	<0.10	0.15	Bal
T01179	0.21	1.06	<0.15	0.43	0.64	<0.20	<0.05	0.16	<0.10	0.15	Bal
T01180	0.21	0.87	<0.15	0.39	0.64	<0.20	<0.05	0.16	<0.10	0.15	Bal
T01187	0.21	0.97	<0.15	0.39	0.64	<0.20	<0.05	0.16	<0.10	0.15	Bal
T01192	0.20	1.01	<0.15	0.37	0.60	<0.20	<0.05	0.15	<0.10	0.15	Bal
T01193	0.21	0.97	<0.15	0.39	0.64	<0.20	<0.05	0.16	<0.10	0.15	Bal
T00861	0.22	0.99	<0.15	0.43	0.68	<0.20	<0.05	0.16	<0.10	0.15	Bal
T00862	0.20	1.01	<0.15	0.39	0.62	<0.20	<0.05	0.16	<0.10	0.15	Bal
T00863	0.23	1.01	<0.15	0.43	0.69	<0.20	<0.05	0.17	<0.10	0.15	Bal
T00864	0.20	1.03	<0.15	0.39	0.63	<0.20	<0.05	0.16	<0.10	0.15	Bal
T01205	0.22	1.01	<0.15	0.38	0.66	<0.20	<0.05	0.17	<0.10	0.15	Bal
T01206	0.22	1.04	<0.15	0.37	0.66	<0.20	<0.05	0.17	<0.10	0.15	Bal
T01236	0.21	1.03	<0.15	0.38	0.63	<0.20	<0.05	0.17	<0.10	0.15	Bal
T01241	0.20	0.99	<0.15	0.35	0.63	<0.20	<0.05	0.17	<0.10	0.15	Bal
T00191	0.20	0.93	<0.15	0.36	0.61	<0.20	<0.05	0.16	<0.10	0.15	Bal
T00192	0.20	1.01	<0.15	0.39	0.62	<0.20	<0.05	0.16	<0.10	0.15	Bal
T00193	0.22	0.99	<0.15	0.43	0.68	<0.20	<0.05	0.16	<0.10	0.15	Bal

T0014	44.8	40.2	15.10
T0016	43.8	39.7	15.00
T00136	43.9	38.9	16.20
T00130-1	45.0	41.3	13.40
T00129-1	45.0	40.1	15.10
T01179	45.3	40.6	16.20
T01180	44.8	39.9	14.80
T01187	45.0	39.9	16.30
T01192	43.9	38.4	17.80
T01193	44.3	40.0	16.10
T00881	43.2	38.6	16.30
T00862	43.9	39.0	15.70
T00863	42.9	37.4	18.00
T00864	44.6	39.9	16.50
T01205	45.0	41.3	16.80
T01206	44.7	40.8	16.60
T01236	44.2	39.6	14.60
T01241	48.7	39.6	14.60
T00191	46.0	42.1	14.40
T00192	44.2	40.0	13.00
T00193	45.8	41.8	12.60

4. TOLERANCE:

Lot No.	Thickness Tolerance	Width Tolerance	Length Tolerance
L701007	-0/+0.017 in.	-0/+0.157 in.	-0/+0.157 in.
T00181	-0/+0.017 in.	-0/+0.157 in.	-0/+0.157 in.
T00182	-0/+0.017 in.	-0/+0.157 in.	-0/+0.157 in.
T00188-1	-0/+0.017 in.	-0/+0.157 in.	-0/+0.157 in.
T00140-1	-0/+0.020 in.	-0/+0.157 in.	-0/+0.157 in.
T9603	-0/+0.020 in.	-0/+0.157 in.	-0/+0.157 in.
T00883	-0/+0.023 in.	-0/+0.157 in.	-0/+0.157 in.
T00884	-0/+0.039 in.	-0/+0.157 in.	-0/+0.157 in.
T00886	-0/+0.056 in.	-0/+0.157 in.	-0/+0.157 in.
T00888	-0/+0.017 in.	-0/+0.157 in.	-0/+0.157 in.
T00889	-0/+0.023 in.	-0/+0.157 in.	-0/+0.157 in.
T00890	-0/+0.023 in.	-0/+0.157 in.	-0/+0.157 in.
T00891	-0/+0.023 in.	-0/+0.157 in.	-0/+0.157 in.
T00892	-0/+0.031 in.	-0/+0.157 in.	-0/+0.157 in.
T00894	-0/+0.023 in.	-0/+0.157 in.	-0/+0.157 in.
T00896	-0/+0.023 in.	-0/+0.157 in.	-0/+0.157 in.
T00897	-0/+0.031 in.	-0/+0.157 in.	-0/+0.157 in.
T00906	-0/+0.031 in.	-0/+0.157 in.	-0/+0.157 in.
T00907	-0/+0.031 in.	-0/+0.157 in.	-0/+0.157 in.
T00908	-0/+0.031 in.	-0/+0.157 in.	-0/+0.157 in.
T00913	-0/+0.039 in.	-0/+0.157 in.	-0/+0.157 in.
T00914	-0/+0.039 in.	-0/+0.157 in.	-0/+0.157 in.
T00916	-0/+0.039 in.	-0/+0.157 in.	-0/+0.157 in.
T00136	-0/+0.017 in.	-0/+0.157 in.	-0/+0.157 in.

9. Packing: On wooden pallet, securely for export, with suitable desiccant included (6 bags at least).

- ◆ Brushed finish.
- ◆ Edge burr must be small enough not to cause interference when packing.
- ◆ Scratches that cannot be felt with the fingernail are acceptable on the surfaces.
- ◆ Max number of indentations: 1 in any surface area measuring 37x37.

8. Surface quality:

7. Lateral Bow: Max deviation from a straight edge: 0.1 inch
1/2AA tolerances apply



Longitudinal flatness: 3/32 inch in any 6 ft or less	Transverse flatness	
	0.375-0.600 in.	0.625-2.0 in.
Short span flatness	0.050 inch in any 2 ft or less	0.038 inch in any 2 ft or less
	0.375-0.600 in.	0.625-2.0 in.
Thickness: 0.375-0.6 in.		
Width: 48.5-60.5 in.		
Thickness: 0.625-1.0 in.		
Width: 48.5 in.		
Thickness: 2.0 in.		
Width: 48.5-60.5 in.		

6. FLATNESS: Allowable deviation from flat (inches):

Lengths 96.5 inches	0.040xwidth, ft
Lengths 144.5 inches	0.055xwidth, ft

5. SQUARENESS: Maximum difference between diagonals (inches):

T00130-1	-0/+0.017 in.	-0/+0.157 in.	-0/+0.157 in.
T00129-1	-0/+0.017 in.	-0/+0.157 in.	-0/+0.157 in.
T01179	-0/+0.023 in.	-0/+0.157 in.	-0/+0.157 in.
T01180	-0/+0.023 in.	-0/+0.157 in.	-0/+0.157 in.
T01187	-0/+0.031 in.	-0/+0.157 in.	-0/+0.157 in.
T01192	-0/+0.017 in.	-0/+0.157 in.	-0/+0.157 in.
T01193	-0/+0.017 in.	-0/+0.157 in.	-0/+0.157 in.
T00861	-0/+0.020 in.	-0/+0.157 in.	-0/+0.157 in.
T00862	-0/+0.020 in.	-0/+0.157 in.	-0/+0.157 in.
T00863	-0/+0.020 in.	-0/+0.157 in.	-0/+0.157 in.
T00864	-0/+0.020 in.	-0/+0.157 in.	-0/+0.157 in.
T01205	-0/+0.023 in.	-0/+0.157 in.	-0/+0.157 in.
T01208	-0/+0.023 in.	-0/+0.157 in.	-0/+0.157 in.
T01236	-0/+0.039 in.	-0/+0.157 in.	-0/+0.157 in.
T01241	-0/+0.039 in.	-0/+0.157 in.	-0/+0.157 in.
T00181	-0/+0.060 in.	-0/+0.157 in.	-0/+0.157 in.
T00192	-0/+0.060 in.	-0/+0.157 in.	-0/+0.157 in.
T00193	-0/+0.060 in.	-0/+0.157 in.	-0/+0.157 in.

1/2AA tolerances apply

10. Plate Marking: Each plate will be line marked showing the following:

- ◆ Alloy and temper
- ◆ Nominal thickness(inches)
- ◆ Lot No.

◆ Specification:ASTM-B209 AMS 4027 ASME-SB209 AMS-QQA 250/11

◆ Product: NELA

11. Labeling: Each pack shall be labeled with the following information:

- ◆ Aluminum Alloy Plate
- ◆ Customer:
- ◆ Alloy & Temper
- ◆ Size(inches):
- ◆ Order No.
- ◆ Pallet No.
- ◆ Made in China
- ◆ Lot number
- ◆ N. W. (kg)
- ◆ G. W. (kg)
- ◆ No. of PCS

MATERIAL CONFORMS AMS QQA250/11, AMS 4027, ASTM B209 SB-209 IN ALL RESPECTS

CHIEF INSPECTOR:



MATERIAL RECEIPT INSPECTION FORM

PO / BATCH NO: 039776/507884

THICKNESS ORDERED: 0.375
 THICKNESS RECEIVED: 0.375
 SHEET SIZE ORDERED: 0.375
 SHEET SIZE RECEIVED: 0.375

MATERIAL: M303R0.375
 DATE: MAY 11 2018

MATERIAL CERT REC'D: 423
 QUANTITY RECEIVED: 391
 QUANTITY INSPECTED: 39
 QUANTITY REJECTED: 0

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y	
CORRECT FINISH	Y	
CORROSION	Y	
CORRECT GRAIN DIRECTION	Y	
CORRECT MATERIAL PER M-DRAWING	Y	
CORRECT THICKNESS	Y	
PHOTO REQUIRED	Y	
CORRECT REF # TO LINK CERT	Y	
CORRECT MATERIAL IDENTIFICATION	Y	
CORRECT M# ON THE MATERIAL	Y	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.				
RECORD RESULTS BELOW				
HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL				
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

Testers located in the Quality Office

QC 18 INSPECTION ENGINEERING SIGNOFF (if required)

INSPECTED BY: DATE: 9 MAY 11 2018

SIGNED OFF BY: DATE:

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 303SS ROUND BAR
(NOTE: AISI 304/316 NOT ACCEPTABLE)

SPECIFICATION: ASTM A582

PART NUMBER: M303R0 DDD

DIA

WHERE "D.DDD" = DIAMETER IN INCHES

EG. 0.75" ROUND BAR = M303R0.750

RELEASED
2010-02-02
MR

REV.	DESCRIPTION	CP	DS	DATE
A	NEW ISSUE			10.01.05
DESIGN				
DRAWN				
CHECKED				
MFG. APPR				
APPROVED				
DE APPR				
DATE	10.01.05			

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. M303R
TITLE 303 ROUND BAR
REV. B
SHEET 1 OF 1
SCALE NTS

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87288

Part

16150 N

NAS North American Stainless Canada Inc.
740 Imperial Road North
Guelph, ON N1K1Z3
Canada

METALLURGICAL TEST REPORT

6870 Highway 42 East
Gibson, KY 41045-9615
(502) 347-6000

Certificate: 383542 2 Mail To:

Customer: 007060 001

Ship To:

209627

Date: 2/20/2018 Page: 1

Steel: 303

Finish: CD

Your Order: C113057

NAS Order: PN 0089721 01 Heat Treat Code: 45, 401

Corrosion:

PRODUCT DESCRIPTION:

Round Bar, Annealed, Cold Draw
UNS 30300, ASTM A582-12 EN 10304 3.1, ASTM A484/16
AMS 5640V TYPE 1, Q08-764B CONDITION A
SOLUTION ANNEAL TEMP 1900F MIN, ASTM F899/12b

REMARKS:

COMPLIES W/REQUIREMENTS OF DPAR 253.225-7009 EU DIRECTIVE
2011/65/EU, ROHS, EAF+AOD+CC, NO WELD REPAIR, MELTED AND MFG
IN USA FREE FROM MERCURY AND LOW MELTING ALLOY CONTAMINATION

Product ID	Skid #	Diameter	Size	Weight	Length	Mark	Pieces	Commodity Code
B02863 9		.3750		4.109	144.00	57	1	

CHEMICAL ANALYSIS

NAS Heat

CM(Country of Melt)

ES(Spain)

US(United States)

Lab Accreditation Bureau, ISO/IEC 17025, Certificate# L2323

Chemical Analysis per ASTM A751/14a

CM	C %	CO %	CR %	CU %	MO %	N %	NI %	P %
US	.047	.11	17.12	.34	1.91	.285	.017	8.59
S %	SI %							
.3140	.49							.033

MECHANICAL PROPERTIES

Product ID	1 d o f c r	HB No.	.2YS KSI	UTS KSI	RA %	Elong % 2"
B02863 9	RL	216.0	76.80	113.68	53.35	31.85

NAS hereby certifies that the analysis on this certification is correct. Based upon the results and the accuracy of the test methods used, the material meets the specifications stated. These results relate only to the items tested and this report cannot be reproduced, except in its entirety, without the written permission of NAS.

Technical



Order - Factory

CO00087288

Product Description	Weight	Qty	UM	PCS NB			Internal Use Only		
				CMD	EXP	B/O	IN	I	S C OUT
LINE#5 HEAT: 892190 6 FLAT ALU 3/4 X 1 1/2 6061-T6 * FAL-34112 2584 1 X 20'			0.00 P1_\$CLB	0.00					
LINE#6 HEAT: 68549 7 ROUND SS 7/16 304 (R) RSS-716 5779 1 X 133"			0.00 P1_\$CLB	0.00					
LINE#7 HEAT: CH-6643 8 ROUND SS 3/8 304 (R) RSS-38 5768 1 X 127"			0.00 P1_\$CLB	0.00					
LINE#8 HEAT: 646M 9 ROUND 4140 HEAT TREAT 1 (R) R4140-1H 4919 1 X 12'			0.00 P1_\$CLB	0.00					
LINE#9 HEAT: 177569 10 ROUND 4140 HEAT TREAT 1 1/2 (R) R4140-112H 4893 1 X 5-4" OFF CUT			0.00 P1_\$CLB	0.00					
LINE#10 HEAT: A17344 11 ROUND SS 3/8 303 (R) RSS-38303 5765 3 X 13' LINE#11 HEAT: 177569			0.00 P1_\$CLB	0.00					

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-4140-5-0.500x10.000 PO / BATCH NO.: 039-726/507087 DATE: MAY 11 2018

MATERIAL CERT REC'D:	<u>YES</u>	THICKNESS ORDERED:	<u>0.500</u>
QUANTITY RECEIVED:	<u>4'</u>	THICKNESS RECEIVED:	<u>0.500</u>
QUANTITY INSPECTED:	<u>4'</u>	SHEET SIZE ORDERED:	<u>N/A</u>
QUANTITY REJECTED:	<u>0</u>	SHEET SIZE RECEIVED:	<u>N/A</u>

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="checkbox"/> Y	
CORRECT FINISH	<input checked="" type="checkbox"/> Y	
CORROSION	<input checked="" type="checkbox"/> Y	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> Y	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/> Y	
CORRECT THICKNESS	<input checked="" type="checkbox"/> Y	<u>As tm 4839</u>
PHOTO REQUIRED	<input checked="" type="checkbox"/> Y	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> Y	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> Y	<u>Heat # 300188</u>
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> Y	
DOES THIS MATERIAL REQUIRE	<input checked="" type="checkbox"/> Y	
ENGINEERING SIGN OFF	<input checked="" type="checkbox"/> Y	
DOES THIS REQUIRE AN	<input checked="" type="checkbox"/> Y	
EXTRUSION REPORT	<input checked="" type="checkbox"/> Y	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.	RECORD RESULTS BELOW	TYPE OF MATERIAL	SIZE OF TEST SAMPLE	HARDNESS / DUROMETER READING
		HRC		
		HRB		
		DUR A		
		DUR D		
		WEBSTER		

Testers located in the Quality Office

QC 18 INSPECTION
ENGINEERING SIGNOFF (if required)

INSPECTED BY: DA 11 DATE: MAY 11 2018

SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

REV	DESCRIPTION	ECN #	DATE	BY	APPROV
A	NEW ISSUE	18.544	18.2.13	VM	ML

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL : AISI 4140 / 4142 STEEL SHEET OR PLATE

MINIMUM ROCKWELL C = 28 Rc
MAXIMUM ROCKWELL C = 32 Rc

SPECIFICATION:

ASTM A829 / AMS 6395

PART NUMBER:

MT-4140-S-[T.TTT] x [W.WWW]

WHERE "T.TTT" = THICKNESS IN INCHES
WHERE "W.WWW" = WIDTH IN INCHES (OPTIONAL FOR SPECIFYING CUT PLATE)

EX. 0.063" THICK SHEET = MT-4140-S-0.063
EX. 3.5" WIDE BY 0.500" THICK PLATE = MT-4140-S-0.500X3.500

DART AEROSPACE Hamilton, Ontario, Canada	
TITLE	
AISI 4140 / 4142 STEEL SHEET OR PLATE	
PART NO	REV
MT-4140-S	A
TOOL NO INITIALS AND DATE DESIGNED BY: VM 21/3/2018 DRAWN BY: VM 21/3/2018 CHECKED BY: VM 21/3/2018 APPROVED BY: ML 02/14/2018 SCALE: NTS SHEET 1 OF 1	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DIMENSIONS ARE TO BE AFTER FINISHING TOLERANCES: FRACTIONS 1/32 DECIMALS 0.005 ANGLES 0.1° SURFACE FINISH APPROVED BY: ML 02/14/2018 SCALE: NTS SHEET 1 OF 1	
COPYRIGHT © 2018 BY DART AEROSPACE LTD. 1045 DOWNSVIEW BLVD. UNIT 10, DOWNSVIEW, ONTARIO M3H 5K9 905-570-1111 1045 DOWNSVIEW BLVD. UNIT 10, DOWNSVIEW, ONTARIO M3H 5K9 905-570-1111	

Chemical certification

Certification chimique

15947N

Date

15947N

Order Num / No Commande	15947	Vendor / Fournisseur	46	Country of origin / Pay d'origine	SLOVENIA	Date	04/28/17	Heat / coulee	300188	Material ID # / No. matiere	
Grade / Nuance	4140 PLT	Conditions	HEAT TREATED: Q&T E+V								
Shape / Forme	PLT	Size / Dimension	0.500	Specifications	ASTM A829/A829M						

Chemical composition / Analyse chimique											
Carbon (C)	0.400	Actual %	0.1500 / 0.3500	Silicon (Si)	0.227	Actual %	0.6500 / 1.1000	Manganese (Mn)	0.814	Actual %	0.0100 / 0.0190
Sulphur (S)	0.001	Actual %	0.0000 / 0.0000	Chromium (Cr)	0.970	Actual %	0.1000 / 0.2000	Nickel (Ni)	0.240	Actual %	0.1500 / 0.2500
Copper (Cu)	0.178	Actual %	0.0400 / 0.0500	Vanadium (V)	0.035	Actual %	0.0000 / 0.0000	Aluminum (Al)	0.025	Actual %	0.0000 / 0.0000
Cobalt (Co)	0.000	Actual %	0.0000 / 0.0000	Titanium (Ti)	0.000	Actual %	0.0000 / 0.0000		0.000	Actual %	0.0000 / 0.0000
Mechanical properties / Proprietes Mecaniques											
Yield strength / Elasticite	0.000	PSI	0.000	Elongation / Allon. (%)	0.00	Red. of area / Surface (%)	0.00	RC		Surface Hd / Durete	299-305 BHN

Note:

We certify that the above data has been verified and are conform to an original mill or supplier certificate supplied to us with the material.
Nous certifions que les donnees ci haut ont ete verifiees et sont conformes d'apres un certificat originale qui nous a ete fourni par notre fournisseur.

Prepared by: / Prepare par:

[Signature]

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-A513-T-1.000W0.120 PO / BATCH NO.: 039776/5070826 DATE: MAY 11 2018

MATERIAL CERT REC'D: Y05 QUANTITY RECEIVED: 112 QUANTITY INSPECTED: 112 QUANTITY REJECTED: 0

THICKNESS ORDERED: W0.120 THICKNESS RECEIVED: W0.120 SHEET SIZE ORDERED: N/A SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="radio"/> Y	
CORRECT FINISH	<input checked="" type="radio"/> Y	
CORROSION	<input checked="" type="radio"/> Y	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="radio"/> Y	
CORRECT THICKNESS	<input checked="" type="radio"/> Y	
PHOTO REQUIRED	<input checked="" type="radio"/> Y	
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y	
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="radio"/> Y	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="radio"/> Y	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.				
RECORD RESULTS BELOW				
HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL				
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

Testers located in the Quality Office

DC 18 INSPECTION ENGINEERING SIGNOFF (if required)

INSPECTED BY: 11 SIGNED OFF BY: _____ DATE: MAY 11 2018

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

REV.	DESCRIPTION	ECN #	DATE	BY	APPROVED
A	NEW RELEASE	17-555	17-09-06	VM	VM
B	TYPE 5 ADDED, TEMPLATE UPDATED	17-190	17-12-13	VM	ML

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: ASTM A513 TYPE 5 (1020/1026) SEAMLESS ALLOY STEEL ROUND TUBING (DOM)


SPECIFICATION: ASTM A513 TYPE 5

PART NUMBER: MT-A513-T-10-DDDWT.TTT

WHERE D.DDD IS OUTSIDE DIAMETER IN INCHES

WHERE T.TTT IS WALL THICKNESS IN INCHES

EG. 3/4" ROUND TUBING WITH .120" WALL THICKNESS = MT-A513-T-0.750W0.120

 DART AEROSPACE Hamilton, Ontario, Canada	
TITLE ASTM A513 TYPE 5 (1020/1026) ALLOY STEEL ROUND TUBING (DOM)	
PART NO. MT-A513-T	REV B
TOOL NO. DESIGNED BY: VM 17/12/13 CHECKED BY: VM 17/12/2017 DIMENSIONS: 10.000 DATE: 17/12/2017 APPROVED BY: ML 17/12/2017 SCALE: 1:1 SHEET 1 OF 1	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DECIMALS ARE TO 3 PLACES FRACTIONS ARE TO 16 PLACES ANGLES ARE TO 10 PLACES SURFACES ARE TO 10 PLACES TOLERANCES ARE TO 10 PLACES FINISHES ARE TO 10 PLACES MATERIALS ARE TO 10 PLACES COPIES OF THIS DRAWING ARE TO BE MAINTAINED IN THE FILE	
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TME-1000130

50509.

TPI Work Test Certificate

Customer		Order No.		Description		Specification		Condition		Bundle No.		Cart Part No.		Bundle		Tagging		Tube Marking		P. Uom		Size	
TUBE INVESTMENTS OF INDIA LIMITED		BC8906/16-AUG-17		P&B/STBL TBBS - CDW		ASTM A518/A513M-15 TS C1020		GRA		017017526,017017527,017017567,017017586												1.000" OD X 0.760" ID X 0.120" WT X 20' 24' RL	
TUBE PRODUCTS OF INDIA - MODULE - 1																							
POST BOX NO.4 & 16, M.T. ROAD, AVADI, CHENNAI - 600054																							

TABLE ANALYSIS:											
Qb	Max	Min	Heat No.	%C	%Mn	%P	%S	%Ni	%Al	%Cu	%Nb
8721446	208	35	3	0.18	0.03	0.01	0.01	0.01	0.01	0.01	0.01

TECHNICAL TESTS:											
Test	Spec	Result									
Crushing											
Flaring											
Flattening											
Flanging											
Key, Flange											
Ring, Camp, Lap											

Non-Destructive Tests:											
Test	Spec	Result									
Edy Current	0.75/1000 MIN MAX	100									
Ultrasonic Test		100% (BEST) OK									
Visual		100% (BEST) OK									
Application Testing											

Mechanical Properties:											
Property	Unit	Value									
Yield Strength	MPa	448									
Tensile Strength	MPa	5455									
Elongation	%	44									

Dimensions in inches:											
Dimension	Unit	Value									
OD	in	1.000									
ID	in	0.760									
WT	lb	24.0									
Length	ft	20.0									

Customer Information:											
TC No.	Date	Invoice No.	Invoice Date	Job/Batch No.							
P&B/BC17A0112	23-OCT-17	300202000059	16-OCT-17	RBCL1710100							

Prepared by: N. Arun Kumar											
Unit: Tube Products of India											
For Tube Investments of India											

This is to certify that the goods are supplied as per the purchase order and specification requirements											
---	--	--	--	--	--	--	--	--	--	--	--

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>77</u>	SIGNED OFF BY:	DATE: <u>9-89 MAY 11 2018</u>

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.				
RECORD RESULTS BELOW				
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y	
CORRECT FINISH	Y	
CORROSION	Y	
CORRECT GRAIN DIRECTION	Y	
CORRECT MATERIAL PER M-DRAWING	Y	
CORRECT THICKNESS	Y	
PHOTO REQUIRED	Y	
CORRECT REF # TO LINK CERT	Y	
CORRECT MATERIAL IDENTIFICATION	Y	
CORRECT M# ON THE MATERIAL	Y	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	

MATERIAL CERT REC'D:	Y	THICKNESS ORDERED:	0.750
QUANTITY RECEIVED:	36'	THICKNESS RECEIVED:	0.750
QUANTITY INSPECTED:	36'	SHEET SIZE ORDERED:	11/4
QUANTITY REJECTED:	0	SHEET SIZE RECEIVED:	11/4

MATERIAL: M30380.150 DATE: MAY 11 2018

PO / BATCH NO.: 039726/500825

MATERIAL RECEIPT INSPECTION FORM

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 303 SS ROUND BAR

(NOTE: ~~AISI~~ 304/316 NOT ACCEPTABLE)

SPECIFICATION:

ASTM A582

PART NUMBER:

M303RD.DDD
DIA.

WHERE "D.DDD" = DIAMETER IN INCHES

EG. 0.75" ROUND BAR = M303R0.750

RELEASED
2010-02-02
MND

B		REFORMAT DWG. AND SPECS (ZN DB-1).		CP	10.01.05	
A		NEW ISSUE		DS	01.12.20	
REV	DESCRIPTION				BY	DATE
DESIGN		DART AEROSPACE LTD				
DRAWN		HAWKESBURY, ONTARIO, CANADA				
CHECKED		DRAWING NO.				REV. B
MFG. APPR.		M303R				SHEET 1 OF 1
APPROVED		TITLE				SCALE
DE APPR.		303 ROUND BAR				NTS
DATE	10.01.05	COPYRIGHT © 2001 BY DART AEROSPACE LTD.				
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North American Stainless Canada Inc.
740 Imperial Road North
Guelph, ON N1K1Z3
Canada

METALLURGICAL TEST REPORT

**6870 Highway 42 East
Ghent, KY 41045-9615
(502) 347-6000**

Certificate: 363775 3

Ship To:

Date: 12/15/2017 Page: 1

Customer: 007036 501

Your Order: 4500835654

Was Order: PN 0086203 02

Heat Treat Code: 43,719

Corrosion:

PRODUCT DESCRIPTION:

Round Bar, Annealed, Cold Draw
UNS 30300, ASTM A582/12 UN 10204 3.1, ASTM A484/15
AMS 5640V TYPE 1, Q38-76AB CONDITION A
SOLUTION ANNEAL TEMP 1900°F MIN, ASTM F899/12b

REMARKS:

COMPLIES W/REQUIREMENTS OF DEAR 252.225-7009 EU DIRECTIVE 2011/65/EU RoHS. EAF-AOD+CC. NO WELD REPAIR. MELTED AND MFG IN USA FREE FROM MERCURY AND LOW MELTING ALLOY CONTAMINATION

Product Id	Skid #	Diameter	Size	Weight	-----Length-----	Mark	Pieces	Commodity Code
BJ0636 8				1.053	144.00	5	1	160008217

CHEMICAL ANALYSIS CN(Country of Melt) ES(Spain) US(United States) ZA(South Africa) JP(Japan)

WAS Heat	CM	C %	CO %	CR %	CU %	MN %	MO %	N %	NI %	P %
572C	US	.036	.13	17.01	.28	1.97	.267	.048	8.49	.030
		S %	SI %							
			.3403							

MECHANICAL PROPERTIES

Product Id	1 d o i o i	HB No.	.2YS KSI	UTS KSI	RA %	Elong % 4D
BJ0636 8	R L	203.0	66.40	109.81	36.18	24.21

50383

NAS hereby certifies that the analysis on this certification is correct. Based upon the results and the accuracy of the test methods used, the material meets the specifications stated. These results relate only to the items tested and this report cannot be reproduced, except in its entirety, without the written approval of NAS.

Technical
Dept. Mgr.

KRIS LARK

12/15/2017

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M41704-R1.500 DATE: MAY 11 2018

MATERIAL CERT REC'D: YES
 QUANTITY RECEIVED: 5
 QUANTITY INSPECTED: 5
 QUANTITY REJECTED: 0

PO / BATCH NO.: 039776/5070823

THICKNESS ORDERED: 1.500
 THICKNESS RECEIVED: 1.500
 SHEET SIZE ORDERED: A1/A
 SHEET SIZE RECEIVED: A1/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="radio"/> Y	
CORRECT FINISH	<input checked="" type="radio"/> Y	
CORROSION	<input checked="" type="radio"/> Y	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="radio"/> Y	
CORRECT THICKNESS	<input checked="" type="radio"/> Y	
PHOTO REQUIRED	<input checked="" type="radio"/> Y	
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y	
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="radio"/> Y	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="radio"/> Y	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.				
RECORD RESULTS BELOW				
HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL				
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

Testers located in the Quality Office

QC 18 INSPECTION ENGINEERING SIGNOFF (if required)

INSPECTED BY: 11 SIGNED OFF BY: _____

DATE: 9-09 MAY 11 2018

DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



DESIGN BY	APPROVED	CHECKED	DATE	A
DRAWN BY			05.02.21	
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		DRAWING NO. M4140H-R		
REV. A		SHEET 1 OF 1		
SCALE		TITLE		
1:1		4140 ROUND BAR		
NEW ISSUE		05.02.21		

PURCHASE MATERIAL: AISI 4140 H ROUND BAR

PER AISI 4140 OR ASTM A304-02/-A-434-BC /
-A193-C3-GRABE-B7 / -A29-02 / -A22-91 OR
UNS # - G41400

MINIMUM ULTIMATE TENSILE STRENGTH = 117 KSI
MINIMUM YIELD TENSILE STRENGTH = 66 KSI

PART NUMBER: M4140H-R | D.DDD | DIA
WHERE D.DDD = DIAMETER IN INCHES

EG. 7/8" ROUND BAR = M4140H-R0.875

RELEASED
5.15

CERTIFICATE OF TEST

By: *Walter P. Kretzler*

Walter P. Kretzler - Director of Q.A./Chief Metallurgist

WE, hereby certify that these goods were produced in compliance with all applicable requirements of sections 6, 7, and 12 of the Fair Labor Standards Act, as amended, and all regulations and orders of the United States Department of Labor issued under section 14 thereof. Material was not exposed to mercury or any metal alloy that is liquid at ambient temperature during processing or while in our possession. No weld repairs performed on the above material.

LOT 5639932		WEIGHT (LBS) 3,330		PIECES 25		LOT 5640296		WEIGHT (LBS) 1,810		PIECES 14	
JOB		WEIGHT (LBS)		PIECES		JOB		WEIGHT (LBS)		PIECES	
01	56	02	56	03	56	04	56	05	56	06	56
07	56	08	56	09	56	10	56	11	56	12	56
13	56	14	56	15	56	16	56	17	56	18	56
19	56	20	56	21	56	22	56	23	56	24	56
25	56	26	56	27	56	28	56	29	56	30	56
31	56	32	56	33	56	34	56	35	56	36	56
37	56	38	56	39	56	40	56	41	56	42	56
43	56	44	56	45	56	46	56	47	56	48	56
49	56	50	56	51	56	52	56	53	56	54	56
55	56	56	56	57	56	58	56	59	56	60	56
H172771		HBN = 285		1640F		2.0 MIN		H20		1350F	
JOB		SURFACE		TEMPERATURE		TIME		QUENCH		TEMPERATURE	
H172771		TENSILE		2% YIELD		ELONG		R OF A		HARDNESS	
JOB		TENSILE		2% YIELD		ELONG		R OF A		HARDNESS	
.009		N/A		N/A		N/A		N/A		.0004	
N		TE		AS		PS		SE		B	
0.400		0.850		.009		.016		0.260		.210	
C		M		P		S		SI		MO	
.003		.034		.260		.210		.210		.260	
V		AL		CU		MO		CR		MO	
A173444		FINE(S-8)		STEEL DYNAMICS (USA)		BLOOM		CAST		REDUCTION RATIO	
HEAT		GRAIN PRACTICE		SOURCE / MELTED		CAST		REDUCTION RATIO		DI	
<p>4140/42 CAVAL-TRT QT-HR-STEEL FREE 130K TS 110K VS 102% 100K 16% EL 50% R/A SURFACE HBN 268/321 Spec/Rev: ASTM A434-06(2012) CL-8C</p> <p>Spec/Rev: ASME SA193/SA193M GR-B7 Spec/Rev: ASTM A193/A193M-14 GR-B7 Spec/Rev: ASTM A29/A29M-15 Spec/Rev: ASTM</p>											

PURCHASE ORDER B39391

ORDER 960193-1

CUSTOMER ITEM V012142

GRADE Q14140

SIZE 1.5000

LENGTH 20'-0" / 24'-0"

ITEM 141500240004A

SHAPE Round

SIZE MM 38.1000 MM

LENGTH MM 6096 / 7316.2

1412 150th Street
Hammond IN 46327-1799

NIAGARA LASALLE CORPORATION

CERTIFICATE

Rev H184077 2

DATE 01/22/18

PAGE 3

CERTIFICATION

50005

#4893
04140-112#
PO.13325



Order - Factory

Copy

CO00087288

Product Description	Weight	Qty	UM	PCS NB			Internal Use Only		
				CMD	EXP	B/O	IN	I	S C
LINE#5 HEAT: 892190 6 FLAT ALU 3/4 X 1 1/2 6061-T6 * FAL-34112 2584 1 X 20'	27.00	20.00	PI_\$CLB	0.00					
LINE#6 HEAT: 68549 7 ROUND SS 7/16 304 (R) RSS-716 5779 1 X 12' R/L	6.13	12.00	PI_\$CLB	0.00					
LINE#7 HEAT: CH-6643 8 ROUND SS 3/8 304 (R) RSS-38 5768 1 X 12'	4.51	12.00	PI_\$CLB	0.00					
LINE#8 HEAT: 8461 9 ROUND 4140 HEAT TREAT 1 (R) R4140-1H 4919 1 X 12'	32.04	12.00	PI_\$CLB	0.00					
LINE#9 HEAT: 177569 10 ROUND 4140 HEAT TREAT 1 1/2 (R) R4140-112H 4893 1 X 5'-4" OFF CUT	32.56	5.42	PI_\$CLB	0.00					
LINE#10 HEAT: 5538282 11 ROUND SS 3/8 303 (R) RSS-38303 5765 3 X 12' R/L Head & will for	13.54	36.00	PI_\$CLB	0.00					
LINE#11									

CERTIFICATION

50005

3
PAGE
01/22/18
DATE
H184077
Rev 2
CERTIFICATE

B39391 PURCHASE ORDER

ORDER 960193-1

CUSTOMER ITEM V012142

GRADE QTA140

1.5000 375

271 0.02 HIGHER

ASTM A43-06/2012) C1-B0
SpecRev: ASME SA193/SA193M GR-07 SpecRev: ASTM A193/SA193M-14 GR-07 SpecRev: ASTM A29/A29M-15 SpecRev: ASTM A43-06/2012) C1-B0
14042 CAL-R1 Q1-HR-STRESS FREE 130K TS 1.0K VS 1.00% 1000 16% EL 50% P/A SURFACE HBN 269/321 SpecRev: ASTM A43-06/2012) C1-B0

Spec/Rev: ASTM A193/A193M GR-B7 Spec/Rev: ASTM A29/A29M-15 Spec/Rev: ASTM A434-08/2012 CL-B6

4140/42 CAVAL-TRT QT-HR-STRESS FREE 130K TS 140K XS (0% 100K) 15% EL 50% R/A SURFACE HBN 268/321 Spec/Rev:

LENGTH 20' 0" / 24' 0" LENGTH MM 6096 / 7315.2

[illegible]

15000 15000

GRADE Q1A140 SHAPE Round

10/1/20

CUSTOMER ITEM	ITEM
V012142	141500246004A

ORDER 960193-1

PURCHASE ORDER B39391

3

PAGE 1

01/22/18

DATE CERTIFICATION

Hammond IN 46327-1799

1412 150th Street

CERTIFICATE

51101 01816

51924 1400 51887

~~21 1/2 #211 0511 12 1/2 12 1/2~~

71 21-0515 1

10-11-1978

CERTIFICATE OF TEST By: *Walter P. Kretzler*
Walter P. Kretzler - Director of Q.A./Chief Metallurgist

we hereby certify that these goods were produced in compliance with all applicable requirements of sections 4, 9, and 12 of the Fair Labor Standards Act, amended, and all regulations and orders of the United States Department of Labor issued under section 14 thereof. Material was not exposed to mercury or any metal alloy that is liquid at ambient temperature during processing or while in our possession. No weld repair performed on the above material.

[illegible]

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

QC 18 INSPECTION	
ENGINEERING SIGNOFF (if required)	INSPECTED BY: DAS
SIGNED OFF BY:	DATE: 9-8-11 MAY 11 2018
DATE:	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.				
RECORD RESULTS BELOW				
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y	
CORRECT FINISH	Y	
CORROSION	Y	
CORRECT GRAIN DIRECTION	Y	
CORRECT MATERIAL PER M-DRAWING	Y	ASTM A193
CORRECT THICKNESS	Y	
PHOTO REQUIRED	Y	
CORRECT REF # TO LINK CERT	Y	
CORRECT MATERIAL IDENTIFICATION	Y	ASTM A193
CORRECT M# ON THE MATERIAL	Y	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	

MATERIAL CERT REC'D:	Y25	THICKNESS ORDERED:	1.000
QUANTITY RECEIVED:	121	THICKNESS RECEIVED:	1.000
QUANTITY INSPECTED:	121	SHEET SIZE ORDERED:	A14
QUANTITY REJECTED:	0	SHEET SIZE RECEIVED:	A14

MATERIAL: M140-H-R1.000	DATE: MAY 11 2018
PO / BATCH NO: 039726/5070822	

MATERIAL RECEIPT INSPECTION FORM



DESIGN BY		DRAWN BY	
CHECKED		APPROVED	
DATE		TITLE	
05.02.21		4140 ROUND BAR	
A		NEW ISSUE	

REV. A	SHEET 1 OF 1	SCALE	1:1
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PURCHASE MATERIAL: AISI 4140H ROUND BAR

PER AISI 4140 OR ASTM A304-02/-A-434-BC /
-A193-03-GRADE-B7 / -A29-03 / -A322-91 OR
UNS# - 641400

MINIMUM ULTIMATE TENSILE STRENGTH = 100 KSI
MINIMUM YIELD TENSILE STRENGTH = 66 KSI

PART NUMBER: M4140H-R | D.D.D | DIA
WHERE D.D.D = DIAMETER IN INCHES

EG. 7/8" ROUND BAR = M4140H-R.0.875


4/9/33

EN 10204:2004-3:1

Mr. Henshaw, certainly the answer to his question was no.

This document was prepared by means of electronic

Tel: 248-398-3434
Fax: 248-398-1434

		Huntington Facility - Test Report 25 Commercial Road, Huntington, IN 46750 (260) 356-9300 fax (260) 356-9322		Printed: 10/26/2017 11:10 AM									
Sales Order 41745 Heat Number 177869 Size 1.0000 Turned OD 1.0000 Grade 4140	Customer Name EATON STEEL CORPORATION Location 10221 CAPITAL AVE. OAK PARK, MI 48237	Test Remarks: 1 HR RD 4140/2MM 25FT FG MST WO 828517 FG 11142											
Approved <input checked="" type="checkbox"/> By Metallurgist		Approved Date: 10/26/17											
Chemistry Data													
Heat Number	C	Min	P	S	Si	Ni	Cr	Mo	Cu	Al	V	B	Other
177869	0.410	0.090	0.013	0.020	0.230	0.066	0.347	0.189	0.250	0.003	0.026	0.0033	
Q&T Hardness Test Data													
Hardness Type	Min		Max		Location		Sample Location						
Rc			27.8				Surface						
Rc			32.7				Mid Radius						
Ro			33.7				Core						
Q&T Tension Test Data													
Sample Gauge: 500" Dia. Data Number:													
Tensile	Yield 1	Method 1	Yield 2	Method 2	Elong %	R/A %	Gage Length	Tensile Location	PC #				
148 Ksi	138 Ksi	2N Offset			17.0	52.0	2.000" G.L.	Center					
Heat Treat Data													
Austenitize at 1,630°F for 0.7 minutes Tempered at 1,400°F for 0.7 minutes Induction Heating Water Quenched													
Other Test Data													
Decarb (Increase)	Straightness (Inches)	Magnesium (ppm)	As Quenched (Rc)	Microstructure									
	0.125"/5 Ft	4/-5											
Description of Other Tests • Produced Stress Free													

We hereby certify that the reported data are correct according to Gerdau data and those of its suppliers.

[Signature]
 Doug Nelson, Metallurgist

PG37A

Page 1 of 1

422637

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304R0.375 DATE: MAY 11 2018

MATERIAL CERT REC'D: YAS
 QUANTITY RECEIVED: 12
 QUANTITY INSPECTED: 12
 QUANTITY REJECTED: 0

PO / BATCH NO.: 039776/5070821

THICKNESS ORDERED: 0.375
 THICKNESS RECEIVED: 0.375
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="radio"/> Y	
CORRECT FINISH	<input checked="" type="radio"/> Y	
CORROSION	<input checked="" type="radio"/> Y	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="radio"/> Y	
CORRECT THICKNESS	<input checked="" type="radio"/> Y	
PHOTO REQUIRED	<input checked="" type="radio"/> Y	
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y	
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="radio"/> Y	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="radio"/> Y	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.
 RECORD RESULTS BELOW

HRC	HRB	DUR A	DUR D	WEBSTER

TYPE OF MATERIAL
 SIZE OF TEST SAMPLE
 HARDNESS / DUROMETER READING

Testers located in the Quality Office

QC 18 INSPECTION
 ENGINEERING SIGNOFF (if required)

INSPECTED BY: DAS
 DATE: MAY 11 2018
 SIGNED OFF BY: _____
 DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS ROUND BAR
(NOTE: AISI 303 NOT ACCEPTABLE)

ASTM A276

M304R0.750
DIA.

△

SPECIFICATION:

PART NUMBER:

WHERE "D.DDD" = DIAMETER IN INCHES

EG. 0.75" ROUND BAR = M304R0.750

RELEASED
11/18/25

B	REFORMAT DWG. AND SPECS (ZN D6 1), REF PAR 08-020A	CP	09.07.15
A	NEW ISSUE	AJS	08.03.03
REV	DESCRIPTION	BY	DATE
DESIGN	ASS		
DRAWN	QA		
CHECKED	LS		
MFG. APPR	MD		
APPROVED	MD		
DE APPR	MD		
DATE	09.07.15		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		REV. B	
DRAWING NO. M304R		SHEET 1 OF 1	
TITLE 304/316 ROUND BAR		SCALE NTS	
DATE 09.07.15		09.07.15	
COPYRIGHT © 2008 BY DART AEROSPACE LTD ALL RIGHTS RESERVED. NO PART OF THIS DRAWING MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT PERMISSION IN WRITING FROM DART AEROSPACE LTD.			



North American Stainless Canada Inc.
740 Imperial Road North
Guelph, ON N1K1Z3
Canada

METALLURGICAL TEST REPORT

50230
14446870 Highway 42 East
Guelph, KY 41045-9615
(502) 347-6000

Certificate: 373018 31 Mail to:

Ship to:

Customer: 007080 003

Your Order: M8116

Our Order: IM 0257931 04 Heat Treat Code: 44,987

PRODUCT DESCRIPTION:

Round Bar, Annealed, Cold Draw
UNS 30400/30403 EN 10204 3.1, ASTM A484/16
ASTM A276/17, ASTM A479/17, ASTM A182/16 CHEN ONLY,
ASTM B279/13, ASTM A182/13 CHEN ONLY,
AMS 56392, AMS 5647X, AMS 908-7630, 908-7637, ASTM B299/12b
BOLTON AMERAL, TEMP 1900F MIN, ASTM A320/17a CL 1 GR B8
ASTM A193/16-ASME SA193/13 CL 1 GR B8

REMARKS:

COMPLIES W/REQUIREMENTS OF DPM 252.235-7009 EU DIRECTIVE
2011/65/EU. NOEL. BAV+ADD+CC. NO WELD REPAIR. HEATED AND NPG
IN USA FROM MERCURY AND LOW MELTING ALLOY COMPATIBILITY

Date: 1/19/2018 Page: 1

Steel: 306/304L

Finish: CD

Corrosion: ASTM A262/15 Prac A/E OK

Product ID	Grid & Diameter	Size	Weight	Length	Mark	Pieces	Commodity Code
B37280 9		.3750	1.281	144.00	11	1	

CHEMICAL ANALYSIS

CM(Country of Man) ES(Spain) US(United States) ZA(South Africa) JP(Japan)

Lab Accreditation Bureau, ISO/IEC 17025, Certificate# L2323
Chemical Analysis per ASTM A751/14e

Element	CM	C %	CO %	CR %	CU %	FE %	MO %	N %	NI %	P %
606N	CM	.028	.18	18.14	.39	1.31	.280	.071	8.50	.029
	S %	SI %								
	.0260	.23								

MECHANICAL PROPERTIES

Product ID	1 4 0 1 0 1	RD	.2YR	UTR	RA	ELONG
B37280 9	KL	226.0	84.97	111.55	69.24	41.70

NAS hereby certifies that the analysis on this certification is correct. Based upon the results and the accuracy of the test methods used, the material meets the specifications stated. These results relate only to the items tested and this report cannot be reproduced, except in its entirety, without the written approval of NAS.

Technical
Dept. Mgr.

KRIS LARK

1/19/2018

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

QC 18 INSPECTION	
ENGINEERING SIGNOFF (if required)	INSPECTED BY: <u>DAS</u>
SIGNED OFF BY: _____	DATE: <u>9-89 MAY 11 2018</u>

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.				
RECORD RESULTS BELOW				
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

Testers located in the Quality Office

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="radio"/> Y	
CORRECT FINISH	<input checked="" type="radio"/> Y	
CORROSION	<input checked="" type="radio"/> Y	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="radio"/> Y	
CORRECT THICKNESS	<input checked="" type="radio"/> Y	
PHOTO REQUIRED	<input checked="" type="radio"/> Y	
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y	
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="radio"/> Y	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="radio"/> Y	

Heat # C.H-6643

ASTM A276

THICKNESS ORDERED: 0.4375
 THICKNESS RECEIVED: 0.4375
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

MATERIAL CERT REC'D: YES
 QUANTITY RECEIVED: 12'
 QUANTITY INSPECTED: 12'
 QUANTITY REJECTED: 0

PO / BATCH NO.: 039776/5070820

MATERIAL: M304/RO 4375
 DATE: MAY 11 2018

MATERIAL RECEIPT INSPECTION FORM

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS ROUND BAR
(NOTE: AISI 303 NOT ACCEPTABLE)

SPECIFICATION:

PART NUMBER:

ASTM A276
M304R DDD
DIA.

WHERE "D.DDD" = DIAMETER IN INCHES
EG. 0.75" ROUND BAR = M304R0.750

RELEASED
9/10/25/14

R	REFORMAT DWG. ADD SPECS (ZN 08-1).	CP	09.07.15
A	NEW ISSUE	AJS	08.03.03
REV	DESCRIPTION	BY	DATE
DESIGN	AJS		
DRAWN	99		
CHECKED	99		
MFG. APPR.	MS		
APPROVED	MS		
DE APPR.	MS		
DATE	09.07.15		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		REV. B SHEET 1 OF 1 SCALE NTS	
COPYRIGHT © 2008 BY DART AEROSPACE LTD NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT PERMISSION IN WRITING FROM DART AEROSPACE LTD.			

15622

50781

CHANDAN STEEL LIMITED
(GOVT. OF INDIA RECOGNISED EXPORT HOUSE)

5779

ADN OFFICE: 40, SURKHA SAGAR, N.C. & PATKAR MARG, MUMBAI 400 007, INDIA
Tel: 91-22-6620600 Fax: 91-22-6627053/34
Website: www.chandansteel.com
Email: info@chandansteel.comWORKS: PLOT NO. 31 TO 36, 45, 46, 48, & 49/2, 142
(EXP. AREA) CIDC, UNIBERG AON & SURVEY NO. 102/2 & 3, VILLAGE,
DEHARI, TALUKA JAMNAGERGAON, DIST. VALSAD, GUJARAT - 396171
GSTIN - 24AAACC07UB1ZC

B24 QC 09A / 02 / 10.12.2012

MILL TEST / INSPECTION CERTIFICATE 3.1
ACCORDING TO EN 10204 : 2005

Test Certificate No. : EXP/01152 - 07/2017-2018	Date of Issue : 03.01.2018	P. O. No. : MN5942	SC No. & Date : 17-18/00447, Dt. 08.11.2017	Invoice No. & Date : EXP/01152/2017-18 Dt. 03.01.2018
PRODUCT DESCRIPTION				
STAINLESS STEEL ROUND BARS				
Grade	304L	Size	7/16"	Tolerance
h9	Process Route			
Electric Melting, A.O.D. Refining, Continuous Casting				
Chemical Composition (Weight %)				
C	Si	Mn	P	S
Cr	Mo	Ni	Cu	Ti
N				

Specified	Yield Strength	Tensile Strength	Elongation	Reduction of Area	Hardness (HB)
Value	N/mm ² /MPa (Rp0.2)	N/mm ² /MPa (Rm)	%	%	
Min.	-	-	18.00	8.00	-
Max.	0.030	0.045	20.00	12.00	-
Results	0.021	0.040	0.016	8.03	-

Specified	Yield Strength	Tensile Strength	Elongation	Reduction of Area	Hardness (HB)
Value	N/mm ² /MPa (Rp0.2)	N/mm ² /MPa (Rm)	%	%	
Min.	-	-	18.00	8.00	-
Max.	0.030	0.045	20.00	12.00	-
Results	0.021	0.040	0.016	8.03	-

Specified	Yield Strength	Tensile Strength	Elongation	Reduction of Area	Hardness (HB)
Value	N/mm ² /MPa (Rp0.2)	N/mm ² /MPa (Rm)	%	%	
Min.	-	-	18.00	8.00	-
Max.	0.030	0.045	20.00	12.00	-
Results	0.021	0.040	0.016	8.03	-

Specified	Yield Strength	Tensile Strength	Elongation	Reduction of Area	Hardness (HB)
Value	N/mm ² /MPa (Rp0.2)	N/mm ² /MPa (Rm)	%	%	
Min.	-	-	18.00	8.00	-
Max.	0.030	0.045	20.00	12.00	-
Results	0.021	0.040	0.016	8.03	-

Specified	Yield Strength	Tensile Strength	Elongation	Reduction of Area	Hardness (HB)
Value	N/mm ² /MPa (Rp0.2)	N/mm ² /MPa (Rm)	%	%	
Min.	-	-	18.00	8.00	-
Max.	0.030	0.045	20.00	12.00	-
Results	0.021	0.040	0.016	8.03	-

1. Cold drawn & Centreless Ground.
2. Solution annealed at 1050 °C.
3. PMI test done 100% & found Satisfactory.
4. Material is free from radio-active contamination.
5. Inter-Granular Corrosion Test as per ASTM A262 - 15 (Pr.E) satisfactory.
6. The material conforms to ASTM A276-15/A182-15/A479-15 & ASME SA479-13 Specifications.
7. Location of sample - Centre, Direction - Longitudinal, Test Temp - Room Temp, Shape of Test Piece - Round.
8. Marking details - Company Logo, Size, Grade & Heat No.
9. The material is manufactured/melt in Chandan Steel Mill and is of Indian Origin.
10. No welding/weld repairs was performed on this material.

B. S. RAUTELA
MANAGER - QUALITY ASSURANCE

It is hereby certified that the above results are true and correct in every details and are meeting the requirements of specification & purchase order.

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>9-55</u>	SIGNED OFF BY: _____
DATE: <u>MAY 11 2018</u>	DATE: _____

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.				
RECORD RESULTS BELOW				
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y	
CORRECT FINISH	Y	
CORROSION	Y	
CORRECT GRAIN DIRECTION	Y	
CORRECT MATERIAL PER M-DRAWING	Y	
CORRECT THICKNESS	Y	
PHOTO REQUIRED	Y	
CORRECT REF # TO LINK CERT	Y	
CORRECT MATERIAL IDENTIFICATION	Y	
CORRECT M# ON THE MATERIAL	Y	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	

MATERIAL CERT REC'D:	Y
QUANTITY RECEIVED:	30'
QUANTITY INSPECTED:	30'
QUANTITY REJECTED:	0
THICKNESS ORDERED:	0.250
THICKNESS RECEIVED:	0.250
SHEET SIZE ORDERED:	N/A
SHEET SIZE RECEIVED:	N/A

MATERIAL: 16061680.750x01.500 DATE: MAY 11 2018

PO / BATCH NO.: 038776/5070819

MATERIAL RECEIPT INSPECTION FORM

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR

SPECIFICATION:

QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/415/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221

PART NUMBER:

M6061T6B | T.TTT | X | WWW.WWW/ |
THICK | WIDTH

WHERE "T.TTT" = THICKNESS IN INCHES
"WWW.WWW" = WIDTH IN INCHES

E.G. 1.0" X 12.0" BAR = M6061T6B1 000X12.000

B	REMOVE QQ-A-250/1 OPTION, REFORMAT NOTES, ADD ASTM B211/B221 (2N D7-1)	CP	09.07.13
A	NEW ISSUE	DS	01.06.08
REV	DESCRIPTION	BY	DATE
DESIGN	DS		
DRAWN			
CHECKED	ASS		
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	09.07.13		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		REV. B SHEET 1 OF 1 SCALE NTS	
DRAWING NO. M6061T6B		TITLE 6061-T6 BAR	

* SPECIFICATION COPYRIGHT © 2001 BY DART AEROSPACE LTD.
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RELEASED
R 2009-05-03
MAD

Test de dureté Rockwell Rockwell Hardness Test

Client / Customer : LES ACIERS TRANSBEC (1997) LTEE.
Address / Adresse : 4054 BOUL. LE CORBUSIER # 201
LAVAL QC
H7L5R2

commande 7011453

bon de commande / Purchase order # : OU-47404

de matrice / Die # : MS 16477

Alliage & trempage / Alloy & temper : 6061 T6

Contrôle / Control # : 84119-2

Coulée / Cast # : 68549

Dureté Rockwell E /
Rockwell E hardness : 94 HRE
Min. requis / Min. required : 88 HRE
Max. permis / Max. permitted : 100 HRE

Composition chimique typique / Typical chemical composition :

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti
6063	0.28 - 0.60	0.13 - 0.25	0.10 Max	0.10 Max	0.35 - 0.73	0.10 Max	0.05 Max	0.05 Max
6005	0.68 - 0.72	0.15 - 0.27	0.04 - 0.08	0.06 - 0.08	0.48 - 0.52	0.03 Max	0.05 Max	0.03 Max
6005A	0.65 - 0.75	0.15 - 0.27	0.15 Max	0.20 - 0.30	0.45 - 0.55	0.10 Max	0.05 Max	0.05 Max
6061	0.50 - 0.76	0.13 - 0.29	0.15 - 0.28	0.10 Max	0.80 - 1.00	0.04 - 0.14	0.08 Max	0.05 Max
4351	0.7 - 1.3	0.5 Max	0.10 Max	0.40 - 0.80	0.40 - 0.80	--	0.50 Max	0.20 Max

Nous certifions que le matériel fourni rencontre les exigences chimiques telles qu'annoncées par la norme ASTM B-221-14 excepté pour la section 8.2 (nombre de spécimen).
We hereby certify that the material supplied meets the chemical properties as published by the ASTM B-221-14 except for section 8.2 (number of specimen).
Sincèrement vôtre,
Yours truly,

date : 2017-03-10

Daniel Alfredo Pelletier
Directeur Qualité
Quality Director

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061H6B0.75x08.000 DATE: MAY 11 2018
 PO / BATCH NO.: 039776/5070818

MATERIAL CERT REC'D: Yes
 QUANTITY RECEIVED: 12
 QUANTITY INSPECTED: 12
 QUANTITY REJECTED: 0
 THICKNESS ORDERED: 0.750
 THICKNESS RECEIVED: 0.750
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="radio"/> Y	
CORRECT FINISH	<input checked="" type="radio"/> Y	
CORROSION	<input checked="" type="radio"/> Y	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="radio"/> Y	
CORRECT THICKNESS	<input checked="" type="radio"/> Y	
PHOTO REQUIRED	<input checked="" type="radio"/> Y	
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y	
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="radio"/> Y	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="radio"/> Y	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.				
RECORD RESULTS BELOW				
HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL				
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

Testers located in the Quality Office

QC 18 INSPECTION
 ENGINEERING SIGNOFF (if required)
 INSPECTED BY: DAS
 DATE: 9-89 MAY 11 2018
 SIGNED OFF BY: _____
 DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR

SPECIFICATION: QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/415/416)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ~~ASTM B221~~

PART NUMBER:

M6061T6B T.TTT X WWW.WWW

THICK WIDTH

WHERE "T.TTT" = THICKNESS IN INCHES
"WWW.WWW" = WIDTH IN INCHES

E.G. 1.0" X 12.0" BAR = M6061T6B:000X12.000

B	REMOVE QQ-A-250/11 OPTION, REFORMAT NOTES, ADD ASTM B211/B221 (2N D7-1)	CP	09.07.13
A	NEW ISSUE	DS	01.06.08
REV	DESCRIPTION	BY	DATE
DESIGN	DS		
DRAWN	DS		
CHECKED	DS		
MFG APPR	DS		
APPROVED	DS		
DE APPR	DS		
DATE	09.07.13		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. M6061T6B			
TITLE 6061-T6 BAR			
REV. B			
SHEET 1 OF 1			
SCALE NTS			
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RELEASED
2009-08-03
MAD

Signature
aluminum
CANADA INC

1850 CLEMENTS RD
PICKERING, ON L1W 3R8

01/11/2018	5461618	130405	1
4500853283	035450	892190	01/17/18

001		C-012774-1	144" Mill 6061 T6511	160001320 .75"X8"	1 PKGS	ASTM B308-02 & ASTM B221-08
Tensile		MPA / KSI	304.2 / 44.1			
Yield		MPA / KSI	284.2 / 41.2			
% Elongation			14.1			
Conductivity			N/A			
HRE			94			

Chemical Analysis:

Si	0.60	Fe	0.23	Cu	0.19	Mn	0.05	Mg	0.82	Cr	0.06	Zn	0.04	Ti	0.01	V	0.01	Zr	0.00
----	------	----	------	----	------	----	------	----	------	----	------	----	------	----	------	---	------	----	------

This Material is Made in Canada
This Material is RoHS Compliant

This will certify that the material described herein has been inspected and tested in accordance with Signature Aluminum Canada's standard sampling and testing procedures or in accordance with the requirements of any specification forming a part of the material description to the extent indicated herein. Data of chemical composition for the material and test results from samples representative of the material are set forth above hereof or in any attachments hereto. This information shows that the material meets the applicable requirements. Inspection and test records are maintained on file. This certificate shall be deemed apart of and subject to the terms and conditions of warranty set forth on the reverse side of our order acknowledgement form. No other warranties are applicable.

S. Gooder
Quality Manager
Signature Aluminum Canada Inc

ISO 9001/TS16949 Registered Company

Visit us at www.signaturealuminum.com

Rev A

50924 16132
FAL-348
CERTIFICATE OF COMPLIANCE

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u>	SIGNED OFF BY: _____	DATE: <u>9-8 MAY 11 2018</u>

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.				
RECORD RESULTS BELOW				
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

Testers located in the Quality Office

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="radio"/> Y	
CORRECT FINISH	<input checked="" type="radio"/> Y	
CORROSION	<input checked="" type="radio"/> Y	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="radio"/> Y	
CORRECT THICKNESS	<input checked="" type="radio"/> Y	
PHOTO REQUIRED	<input checked="" type="radio"/> Y	
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y	
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="radio"/> Y	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="radio"/> Y	

Handwritten notes: *ASTM B-221*, *Mat # 68726*

MATERIAL CERT REC'D:	<u>YES</u>
QUANTITY RECEIVED:	<u>40'</u>
QUANTITY INSPECTED:	<u>40'</u>
QUANTITY REJECTED:	<u>0</u>
DATE:	<u>MAY 11 2018</u>
MATERIAL:	<u>W60x16R0.750</u>

THICKNESS ORDERED:	<u>0.750</u>
THICKNESS RECEIVED:	<u>0.750</u>
SHEET SIZE ORDERED:	<u>21/4</u>
SHEET SIZE RECEIVED:	<u>21/4</u>
PO / BATCH NO.:	<u>039776/5070817</u>

MATERIAL RECEIPT INSPECTION FORM

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM ROUND BAR

SPECIFICATION: QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/415/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221

PART NUMBER: M6061T6R[D.DDD]
DIA.

WHERE "D.DDD" = DIAMETER IN INCHES
EG. 5/8" ROUND BAR = M6061T6R0.625

REV	DESCRIPTION	BY	DATE
B	REFORMAT DWG, ADD B211& B221 SPEC (ZN D6-1),	CP	08.07.13
A	NEW ISSUE	DS	01.06.08
DESIGN			
DRAWN			
CHECKED			
MFG. APPR			
APPROVED			
DE APPR			
DATE	09.07.13		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA
DRAWING NO. M6061T6R
TITLE 6061-T6 ROUND BAR
REV. B
SHEET 1 OF 1
SCALE NTS

CONTRACT Q.3841 BY DART AEROSPACE LTD
NOT A CONTROL DRAWING
NOT A CONTROL DRAWING
NOT A CONTROL DRAWING

RELEASED
2009-09-09
MAD

Daniel Alfredo Pelletier
 Directeur Qualité
 Quality Director

We hereby certify that the material supplied meets the chemical properties as published by the
 ASTM B-221-14 except for section 8.2 (number of specimen).
 Sincèrement vôtre,
 Yours truly,
 date : 2017-03-28
 Nous certifions que le matériel fourni rencontre les exigences chimiques telles qu'annoncées par
 la norme ASTM B-221-14 excepté pour la section 8.2 (nombre de spécimen).

6063	0.20 - 0.60	0.35 Max	0.10 Max	0.10 Max	0.45 - 0.90	0.10 Max	0.10 Max	0.10 Max	0.10 Max
6005	0.50 - 0.90	0.35 Max	0.10 Max	0.10 Max	0.40 - 0.60	0.10 Max	0.10 Max	0.10 Max	0.10 Max
6005A	0.66 - 0.74	0.14 - 0.28	0.08 - 0.16	0.18 - 0.26	0.46 - 0.54	0.03 Max	0.05 Max	0.05 Max	0.05 Max
6061	0.40 - 0.80	0.70 Max	0.15 - 0.40	0.15 Max	0.60 - 1.20	0.04 - 0.35	0.25 Max	0.15 Max	0.20 Max
6351	0.7 - 1.3	0.5 Max	0.10 Max	0.40 - 0.80	0.40 - 0.80	...	0.20 Max	0.20 Max	0.20 Max

Composition chimique typique / Typical chemical composition :

Dureté Rockwell E /
 Rockwell E hardness : 91 HRE
 Min. requis /
 Min. required : 88 HRE
 Max. permis /
 Max. permitted : 100 HRE

commande : 7020941
 # bon de commande / Purchase order # : OU-47416
 # de matrice / Die # : MS 9909
 Alliage & trempage / Alloy & temper : 6061 T6
 Longueur / Length : 6097 mm
 # Contrôle / Control # : 85611-1
 # Coulée / Cast # : 68706

Test de dureté Rockwell
 Rockwell Hardness Test

Client / Customer : LES ACIERS TRANSBEC (1997) LTEE.

Adresse / Address : 4054 BOUL. LE CORBUSIER, #201

LAVAL, QC

H7L5R2

: 7020941

RAL-34 # 5157
 TAA-1723 419072

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

CC 18 INSPECTION	
ENGINEERING SIGNOFF (if required)	INSPECTED BY: <u>DAS</u>
SIGNED OFF BY:	DATE: <u>11 MAY 11 2018</u>
DATE:	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.				
RECORD RESULTS BELOW				
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

Testers located in the Quality Office

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y	
CORRECT FINISH	Y	
CORROSION	Y	
CORRECT GRAIN DIRECTION	Y	
CORRECT MATERIAL PER M-DRAWING	Y	
CORRECT THICKNESS	Y	
PHOTO REQUIRED	Y	
CORRECT REF # TO LINK CERT	Y	
CORRECT MATERIAL IDENTIFICATION	Y	
CORRECT M# ON THE MATERIAL	Y	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	

COMMENTS

MATERIAL CERT REC'D:	1/25
QUANTITY RECEIVED:	17.1
QUANTITY INSPECTED:	17.1
QUANTITY REJECTED:	0

MATERIAL: <u>M6061TCR3.750</u>	DATE: <u>MAY 11 2018</u>
--------------------------------	--------------------------

THICKNESS ORDERED:	3.750
THICKNESS RECEIVED:	3.750
SHEET SIZE ORDERED:	N/A
SHEET SIZE RECEIVED:	N/A

PO / BATCH NO.: <u>039726/5010816</u>

MATERIAL RECEIPT INSPECTION FORM

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: 6061-T6/T6510/T6511/T62 ALUMINUM ROUND BAR

SPECIFICATION: QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/415/4116)

OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)

PART NUMBER:

M6061T6R/D,DDD

DIA.

WHERE "D,DDD" = DIAMETER IN INCHES

EG. 5/8" ROUND BAR = M6061T6R0.625

B	REFORMAT DWG. ADD B211 & B221 SPEC (ZN DB-1).	CP	09 07 13
A	NEW ISSUE	DS	01 06 08
REV	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR			
DATE	09.07.13		

DART AEROSPACE LTD		REV. B
HAMKESBURY, ONTARIO, CANADA		SHEET 1 OF 1
DRAWING NO.	M6061T6R	SCALE
TITLE	6061-T6 ROUND BAR	NTS

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RELEASED
2009-09-09
JAP



Service Center Metals

5850 Quality Way
Prince George, VA 23875

Can Do.

CERTIFIED INSPECTION REPORT AND TEST RESULTS FOR EXTRUDED PRODUCTS



OUR ORDER NUMBER	946676	ITEM	1
------------------	--------	------	---

CERTIFICATION	ASTM-B221-14 StencilCont
SPECIFICATION	AMS-QQA-200/8 Rev-A obsolete

DIE NUMBER	RD0027	DATE OF SHIPMENT	3/28/2018
ALLOY / TEMPER	6061-T6511	SALESPERSON	D. Schroeder (Canada)
DESCRIPTION	Lightning Rod Title 3.750 +/- .012		

MANIFEST NUMBER	362427
CUSTOMER PO	4500874761
CUSTOMER PART NUMBER	160000985

Quantity Certified 4,364 lbs 28 pcs

We hereby certify that the material covered by this report has been inspected in accordance with the most recent certification revision, and has been found to meet the applicable requirements described herein, including any specifications forming a part of the description, and that samples representative of the material met the composition limits and had the mechanical properties shown. Items produced and certified as 6061-T6511 also meet the requirements of 6061-T6

All aluminum products supplied by Service Center Metals, LLC contain no functional mercury. Neither mercury nor its compounds are used in the manufacture of aluminum products at our facility. Furthermore, aluminum products supplied by Service Center Metals have not, to the best of our knowledge, contacted any source of mercury.

This product is RoHS-2, REACH, and DFARS compliant.

SCM is ISO 9001-2015 certified

Mechanical Properties

Tests	Lot No.	Test Date	Ultimate Tensile Strength (KSI)	Yield Strength (KSI)	Percent Elongation
			min	min	min
			max	max	max
1	201805092	3/19/18	56.50	53.20	13.20
					13.20

Chemical Composition for Aluminum Alloy 6061

Cast #	Lot No.	Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	AL	Others		Melt Source:
												Each	Total	
03121803	201805092	6061	0.76	0.36	0.34	0.10	0.88	0.09	0.08	0.02	97.37	0.05	0.15	United States of America
03121804	201805092	6061	0.72	0.37	0.35	0.10	0.88	0.09	0.08	0.02	97.39	0.05	0.15	United States of America

SCM products are melted and extruded in the USA

Calvin J. Wiggins

Calvin J. Wiggins, Director of Quality & Technical Services

Print Date: 3,28/2018

Rev. 3/14/2018

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M505A H325-032 DATE: MAY 11 2018

PO / BATCH NO.: 039726/5070815

MATERIAL CERT REC'D: Yes
 QUANTITY RECEIVED: 6434
 QUANTITY INSPECTED: 6434
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .032
 THICKNESS RECEIVED: .032
 SHEET SIZE ORDERED: 4x8
 SHEET SIZE RECEIVED: 4x8

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="checkbox"/> Y	
CORRECT FINISH	<input checked="" type="checkbox"/> Y	
CORROSION	<input checked="" type="checkbox"/> Y	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> Y	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/> Y	
CORRECT THICKNESS	<input checked="" type="checkbox"/> Y	
PHOTO REQUIRED	<input checked="" type="checkbox"/> Y	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> Y	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> Y	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> Y	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="checkbox"/> Y	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="checkbox"/> Y	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.				
RECORD RESULTS BELOW				
HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL				
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

Testers located in the Quality Office

QC 18 INSPECTION ENGINEERING SIGNOFF (if required)

INSPECTED BY: 11 SIGNED OFF BY: _____

DATE: MAY 11 2018

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: 5052-H32 ALUMINUM SHEET

SPECIFICATION: QQ-A-250/8 OR AMS-QQ-A-250/8
OR AMS-4010
OR ASTM B209

PART NUMBER: M5052H32S XXX THK

WHERE "XXX" = SHEET THICKNESS (IN INCHES)

EG. 0.063" THICK SHEET = M5052H32.063

PREFERRED SIZE: .XXX BY 4FT BY 8FT

RELEASED
N 2009-10-30
MP

B	REFORMAT DWG. ADD B209 SPEC (ZN D8-1), PAR 08-020A	CP	09 09 26
A	NEW ISSUE	DS	01 06 08
REV	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DATE	09.09.26		
DART AEROSPACE LTD		REV. B	
HAWKESBURY, ONTARIO, CANADA		SHEET 1 OF 1	
DRAWING NO. M5052H32S		SCALE NTS	
TITLE 5052-H32 SHEET SPEC			
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281591



ZHENGZHOU MINGTAI INDUSTRY CO., LTD
NO.6 CHANGCHUN ROAD, HIGH AND NEW TECHNOLOGY
ZONE, ZHENGZHOU HENAN CHINA
TEL: 371-67898611 FAX: 371-67898612

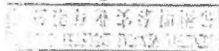
INSPECTION CERTIFICATE

BUYER:

INVOICE NO.: Z-RYWP171009
CONTRACT NU 4500839108/4500839404
LOADING PORT/TIANJIN, CHINA
DESTINATION: TORONTO, CANADA
SHIPPING MAR N/M
DATE 11/02/77
DESCRIPTION OF GOODS
ALUMINIUM COILS ALLOY 3003/H14 AND
P.O. NO. 4500839108/4500839404
DAP TORONTO, CANADA

5052/H32

[illegible]



MANUFACTURER: ZHENGZHOU MINGTAL INDUSTRY CO., LTD

We certify that 5052H32 material complies with ASTM B209-14, AMS QQA 250/2 standard.
We certify that 5052H32 material complies with ASTM B209-14, AMS QQA 250/8B standard.

MECHANICAL PROPERTY TEST REPORTS									
Alloy	No	Temper	Lot	SIZE (MM)	SIZE (IN)	STANDARD			
						Tensile strength (MPa)	Yield strength (MPa)	Elongation (%)	
3003	H14		GFA1706W30032	1.27*1524°C	.050*.60°C	156	156	146	12
3003	H14		GBF1706W30168	1.27*1524°C	.050*.60°C	156	156	146	12
3003	H14		GBF1709W30120	2.54*1219°C	.100*.48°C	156	156	137	10
3003	H14		GBF1710N30001	1.6*1219°C	.063*.48°C	150	150	146	8
3003	H14		GBF1710W30010	3.175*914.4°C	.125*.36°C	153	153	130	12
3003	H14		GBF1710W30025	1.6*1524°C	.063*.60°C	152	152	132	10
3003	H14		GBF1710W30032	3.175*1524°C	.125*.72°C	147	147	127	13
3003	H14		GBF1710W30046	2.997*1219°C	.118*.48°C	161	161	130	14
3003	H14		GBF1710W30047	3.175*1524°C	.125*.60°C	160	160	148	17
3003	H14		GBF1710W30048	1.6*1219°C	.063*.48°C	163	163	152	10
3003	H14		GBF1710W30052	2.997*1524°C	.118*.60°C	176	176	163	13
3003	H14		GBF1710W30082	3.175*1524°C	.125*.60°C	171	171	148	10
3003	H14		GBF1710W30084	3.175*1524°C	.125*.60°C	166	166	128	15
STANDARD									
5052	H32		GBF1710W50132	1.6*1219°C	.063*.48°C	218	218	169	12
5052	H32		GBF1710W50138	0.613*1219°C	.032*.48°C	226	226	182	10
5052	H32		GBF1710W50139	2.032*1219°C	.080*.48°C	221	221	152	12
5052	H32		GBF1710W50140	2.032*1219°C	.080*.48°C	217	217	180	14
5052	H32		GBF1710W50141	2.032*1219°C	.080*.48°C	217	217	180	14
5052	H32		GBF1710W50266	3.175*1829°C	.125*.72°C	224	224	178	12
5052	H32		GBF1710W50305	3.175*914°C	.125*.36°C	222	222	161	14

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M5052H325.040 DATE: MAY 11 2018

MATERIAL CERT REC'D: Yes
 QUANTITY RECEIVED: 64
 QUANTITY INSPECTED: 64
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .040
 THICKNESS RECEIVED: .040
 SHEET SIZE ORDERED: 4x8
 SHEET SIZE RECEIVED: 4x8

PO / BATCH NO.: 039776/5070814

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="checkbox"/>	
CORRECT FINISH	<input checked="" type="checkbox"/>	
CORROSION	<input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/>	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/>	
CORRECT THICKNESS	<input checked="" type="checkbox"/>	
PHOTO REQUIRED	<input checked="" type="checkbox"/>	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/>	
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/>	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW				
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

Testers located in the Quality Office

QC 18 INSPECTION ENGINEERING SIGNOFF (if required)

INSPECTED BY: DAS SIGNED OFF BY: _____ DATE: 9-MAY 11 2018

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: 5052-H32 ALUMINUM SHEET

SPECIFICATION: QQ-A-250/8 OR AMS-QQ-A-250/8
OR ~~AMS-4100~~
OR ASTM B209

PART NUMBER: M5052H32S|XXX
THK

WHERE "XXX" = SHEET THICKNESS (IN INCHES)

EG. 0.063" THICK SHEET = M5052H32.063

PREFERRED SIZE: .XXX BY 4FT BY 8FT

RELEASED
R 2009-10-30
MP

B	REFORMAT DWG. ADD B209 SPEC (ZN DB-1), PAR 08-020A	CP	09.09.26
A	NEW ISSUE	DS	01.06.08
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	09.09.26		

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		REV. B
DRAWING NO.	M5052H32S	SHEET 1 OF 1
TITLE	5052-H32 SHEET SPEC	SCALE
		NTS

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ZHENGZHOU MINGTAI INDUSTRY CO., LTD
NO.6 CHANGCHUN ROAD, HIGH AND NEW TECHNOLOGY
ZONE, ZHENGZHOU HENAN CHINA
TEL: 371-67898811 FAX: 371-67898612

INSPECTION CERTIFICATE

BUYER:

INVOICE NO.:

CONTRACT NUMBER:

LOADING PORT;

DESTINATION:

DATE: _____

2/11/18

W/N

TORONTO, CANADA

QINGDAO, CHINA

4500858689

Z-RYP180202

DESCRIPTION OF GOODS:

P.O. NO.: 4500858689

DAP TORONTO, CANADA

ACTUAL MILL CHEMICAL UNIT. %												
Alloy No.	Temper	Lot No.	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others	Al
5052	H32	GF81801W50081	0.056	0.147	0.147	0.018	0.063	2.533	0.21	0.007	0.019	0.15
5052	H32	GF81801W50082	0.049	0.134	0.07	0.063	2.48	0.204	0.007	0.02	0.015	REMAIN
5052	H32	GF81801W50083	0.1045	0.3111	0.0249	0.0466	2.4639	0.1627	0.0207	0.0199	0.15	REMAIN
5052	H32	GF81801W50037	0.1045	0.3111	0.0249	0.0466	2.4639	0.1627	0.0207	0.0199	0.15	REMAIN
5052	H32	GF81801W50036	0.1129	0.3648	0.0267	0.0571	2.3856	0.1627	0.0207	0.0199	0.15	REMAIN
5052	H32	GF81801W50037	0.1074	0.3298	0.0237	0.0537	2.3824	0.1657	0.025	0.0166	0.15	REMAIN
5052	H32	GF81801W50038	0.1059	0.3184	0.0234	0.0575	2.3789	0.1693	0.0282	0.0166	0.15	REMAIN
5052	H32	GF81801W50059	0.111	0.0827	0.0261	0.0827	2.3961	0.1763	0.0151	0.0358	0.15	REMAIN
5052	H32	GF81801W50061	0.111	0.3129	0.0261	0.0827	2.3961	0.1763	0.0151	0.0358	0.15	REMAIN
STANDARD												
Alloy No.	Temper	Lot No.	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others	Al
5052	H32	GF81801W50081	0.056	0.147	0.147	0.018	0.063	2.533	0.21	0.007	0.019	0.15
5052	H32	GF81801W50082	0.049	0.134	0.07	0.063	2.48	0.204	0.007	0.02	0.015	REMAIN
5052	H32	GF81801W50083	0.1045	0.3111	0.0249	0.0466	2.4639	0.1627	0.0207	0.0199	0.15	REMAIN
5052	H32	GF81801W50037	0.1045	0.3111	0.0249	0.0466	2.4639	0.1627	0.0207	0.0199	0.15	REMAIN
5052	H32	GF81801W50036	0.1129	0.3648	0.0267	0.0571	2.3856	0.1627	0.0207	0.0199	0.15	REMAIN
5052	H32	GF81801W50037	0.1074	0.3298	0.0237	0.0537	2.3824	0.1657	0.025	0.0166	0.15	REMAIN
5052	H32	GF81801W50038	0.1059	0.3184	0.0234	0.0575	2.3789	0.1693	0.0282	0.0166	0.15	REMAIN
5052	H32	GF81801W50059	0.111	0.0827	0.0261	0.0827	2.3961	0.1763	0.0151	0.0358	0.15	REMAIN
5052	H32	GF81801W50061	0.111	0.3129	0.0261	0.0827	2.3961	0.1763	0.0151	0.0358	0.15	REMAIN
MECHANICAL PROPERTY TEST REPORTS												
Alloy No.	Temper	Lot No.	SIZE (MM)	SIZE (IN)	Tensile strength (MPa)	Tensile strength (ksi)	Elongation (%)					
5052	H32	GF81801W50081	1.27*12.19*30.48	0.050*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50082	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50083	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50036	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50037	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50038	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50039	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50040	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50041	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50042	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50043	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50044	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50045	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50046	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50047	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50048	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50049	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50050	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50051	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50052	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50053	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50054	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50055	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50056	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50057	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50058	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50059	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50060	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50061	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50062	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50063	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50064	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50065	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50066	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50067	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50068	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50069	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50070	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50071	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50072	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50073	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50074	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50075	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50076	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50077	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50078	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50079	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50080	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50081	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50082	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50083	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50084	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50085	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50086	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50087	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50088	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50089	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50090	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50091	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50092	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50093	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50094	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50095	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50096	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50097	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50098	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50099	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50100	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50101	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50102	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50103	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50104	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50105	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50106	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50107	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50108	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50109	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50110	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50111	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50112	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50113	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50114	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50115	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50116	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50117	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50118	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50119	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50120	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50121	1.016*12.19*30.48	0.040*4.8*1.20	225	32.5	214-262					
5052	H32	GF81801W50122	1.016*12.19*30.48	0								

MANUFACTURER: ZHENGZHOU MINGTAI INDUSTRY CO., LTD

鄭州明泰實業有限公司

中